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Consumer

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Consumer Information
Magazine

BULLETIN

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BICYCLES

TAPE RECORDERS



FISHING REELS

REDUCING PREPARATIONS

CAR ACCIDENTS AND JUSTICE



1958 CARS / BUICK, PONTIAC, STUDEBAKER

The only safe and effective way to reduce excess poundage



THERE IS NO SECRET about the cause of overweight or what the essential technique is for reducing excess poundage—except in a few quite unusual cases. It is pretty generally agreed that the average American takes in more nourishment than he needs for his expenditure of energy. The result is that the surplus is stored in the body as fat. The slim figure is not only fashionable, but, if slimness is not carried too far, is definitely favorable to health. Medical authorities continually issue warnings on the harmful effects of obesity.

In order to secure or maintain a slender figure, it is neither necessary nor desirable to go on a Spartan or a freak diet, giving up customary foods for black coffee and grapefruit, bananas and milk, hard boiled eggs and lettuce. Few can stand the monotony of such menus, which are besides unbalanced and lacking in certain nutritive substances essential for health. The simple technique is just to cut down the quantity of food eaten at regular mealtimes, restricting severely the amount of fat, fried foods, butter, cream, sweets, gravies, sauces, pastry and other desserts.

The most effective regimen calls for three regular meals a day, with special emphasis on a breakfast high in protein, such as eggs and meat. Experts point out that a hearty breakfast gets the body off to a good start and makes it easier for one to cut down on the amount of food eaten at lunch and dinner, and forego snacks altogether, except perhaps for a cup of black coffee in the midmorning, fruit or tomato juice in the afternoon. It cannot be too strongly emphasized that an effective reducing program calls for eating at regular hours. Skipping a meal is likely to step up the appetite at the next one and make the temptation to nibble between meals irresistible.

Even potatoes, sweets, and bread in small amounts can be included in a reducing diet if a sensible approach of moderation is adopted instead of a crash program for taking off a spectacular number of pounds in a short time, then putting them back again when the body rebels against enforced starvation. As a matter of fact, the technique of reducing strenuously, then putting on weight and taking it off again is considered

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The Consumers' Observation Post

BUDGETING THE COST OF A VACATION BY AUTOMOBILE can easily be handled by consulting the little leaflet, "Your Driving Costs," published by the American Automobile Association. The AAA suggests allowing \$36 per day for two people driving 300 miles a day. It allocates around \$9 for car operation expenses, \$10 for meals, \$9 for lodging, \$1.50 for tips, \$2 for admissions, amusements, and turnpike tolls, with another \$4.50 for incidentals, souvenirs, and emergencies. The AAA recommends vacation in the spring or autumn for the economy-minded in order to avoid peak travel seasons when accommodations are crowded and prices high.

* * *

AS FRESH ASPARAGUS COMES TO MARKET this time of year, the homemaker will undoubtedly serve it to her family as something special for Sunday dinner. Her sense of thrift, however, may be offended by the amount of waste that she is forced to buy as tough, unedible stalk that must be discarded either before or after cooking. While agricultural experts claim that it is necessary to include a goodly portion of the tough part of the stalk in order to prevent loss of moisture in shipping cut asparagus, the consumer may be inclined to raise an eyebrow at this reasoning. With sometimes a third to a half of a spear inedible, selling fresh asparagus on a per-pound basis would appear to be in a class with slack-filled packages, i.e., giving the appearance of a larger amount for the price than is actually available for eating.

* * *

ROYAL JELLY that is so essential for nourishing the queen bee of a hive is no longer being used exclusively in \$15-an-ounce cosmetics. At one time confined chiefly to high-priced "exclusive" creams and lotions, it is now appearing in a \$1-an-ounce line selling at a New York chain variety store and in the private brands put out by R. H. Macy & Co. According to Chemical Week, although nobody has yet come up with controlled scientific studies indicating any therapeutic value of royal jelly as a skin aid, there is no doubt about its effectiveness as a merchandising angle. As one competent chemist for a big manufacturer pointed out: "If cosmetics are to be effective, women must take them seriously and use them faithfully for two or three months. If the cream has something special in it, such as royal jelly, and costs a lot and comes in a pretty package, women will use it long enough to see results."

* * *

WHAT CAUSES CAVITIES IN THE TEETH is a topic of much intensive research. At the Eastman Dental Dispensary at Rochester, N.Y., studies under the direction of Dr. Basil G. Bibby have been made on the potential destructiveness of particular foods to teeth. It is Dr. Bibby's considered opinion from these studies that it is the length of time that foodstuffs remain in contact with the teeth that causes the trouble. Candies and cooked foods forming a sticky mass that adheres to the teeth are to be considered highest among the decay-causing foods, according to Dr. Bibby.

* * *

MUFFLERS AND EXHAUST SYSTEMS of modern automobiles with high compression engines deteriorate faster these days. According to a report in Automotive News, the average muffler life has dropped about 50 percent during post-war years. It now has an average life of about a year and a half or 15,000 miles. The acceleration of the corrosion is attributed partly to the use of antiknock additives in gasoline, with the resulting increase of acid in the exhaust gas condensate. The journal puts the corrosive effect of the exhaust gas condensate from today's super-premium fuels on a par with battery acid, pointing out that it is no wonder that replacements are increasingly needed within a short space of time.

THE COMMON COLD IN CHILDREN is sometimes due not to virus but to allergy. According to Dr. J. R. Jehl of Clifton, N.J., some children get colds about the time the heat is turned on. Whether it is due to overheating, dehumidified air, poor ventilation, bacteria and virus, or irritation of the tissues of the respiratory tract by various animal hairs from pets is not clear. Dr. Jehl reports that frequently infants' colds cleared up when the formula was changed from milk to a substitute such as a soybean preparation. If by careful study the allergens to which the children are sensitive can be detected and they are kept away from the allergenic substances, the resulting health picture will be very much better.

* * *

POULTRY, INCLUDING CHICKENS, TURKEYS, ducks, geese, guinea hens, and pigeons, is now subject to government inspection for wholesomeness. Quality grades have also been established for dressed and ready-to-eat poultry. The top is U.S. Grade A or No. 1, followed by U.S. B or No. 2, and U.S. C or No. 3. Consumers should keep in mind, however, that a bird may be inspected for wholesomeness and not graded, or it may be graded and not inspected for wholesomeness. In New Jersey, for example, protest was made last fall to the State Department of Agriculture regarding turkeys which carried N.J. seals of quality but were not inspected and certified to be free from disease. One member of the Food and Drug Committee of the New Jersey Health Officers Association has recommended that the State seals of quality should be omitted when the birds have not been inspected for wholesomeness.

* * *

THE SMALL AUTOMOBILE is no longer just a fad. It is here to stay. That was the view of several speakers before a meeting of the Society of Automotive Engineers earlier this year. Rapid growth of suburban living has made more than one car to a family essential. The little foreign cars with their ease of handling, low initial cost, and economical consumption of gasoline, oil, and tires fill the growing demand of the economy-minded for a smaller, less-costly-to-operate, easier-to-park automobile. If the present trend toward foreign economy cars continues to rise, U.S. manufacturers, it was predicted, will undoubtedly feel obliged to produce small, light, economical cars for the home market.

* * *

TRANQUILIZING DRUGS of one sort or another are not new and they should not be taken indiscriminately. Professor Julius Pomeranze of New York Medical College has pointed out that the tranquilizing drugs of the past, such as betel nut, and coca leaf, have moderated drives, altered physical structure, and destroyed emotional patterns of the people who have used them generally. It is his opinion that tension and anxiety are factors that lead to progress and eliminating these forces may destroy the human mechanism for dealing with the situations of daily living. He holds that the tranquilizers chlorpromazine and rauwolfia serpentina have proved useful in the treatment of some severe mental disorders, but he questioned whether there have been any real effects in body chemistry established in the case of meprobamate, currently marketed under the trade names of "Miltown" and "Equanil."

* * *

PARKING SPACES in Norfolk, Virginia, are inadequate for the longer, modern automobile. This comment from the transportation committee of the Norfolk Chamber of Commerce was turned over to the city traffic engineer for study. The parking spaces in Norfolk have been lengthened by 19 to 23 inches since the end of World War II and the width of parking spaces has been increased from 8 feet to 9 feet. The city traffic engineer admitted that if all cars were 1958 models the city would be in serious trouble for parking space. Other city officials undoubtedly find themselves in a similar predicament.

(The continuation of this section is on page 35)

Consumer Bulletin

THE ORIGINAL CONSUMER INFORMATION MAGAZINE

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Listings usually are arranged in alphabetical order by brand name (not in order of merit) under each quality or performance rating. A numeral 1, 2, or 3 at the end of a listing indicates relative price, 1 being low, 3 high. Where the 1, 2, 3 price ratings are given, brands in the 1, or least expensive group, are listed alphabetically, followed by brands in price group 2, also in alphabetical order, etc. A quality judgment is wholly independent of price.

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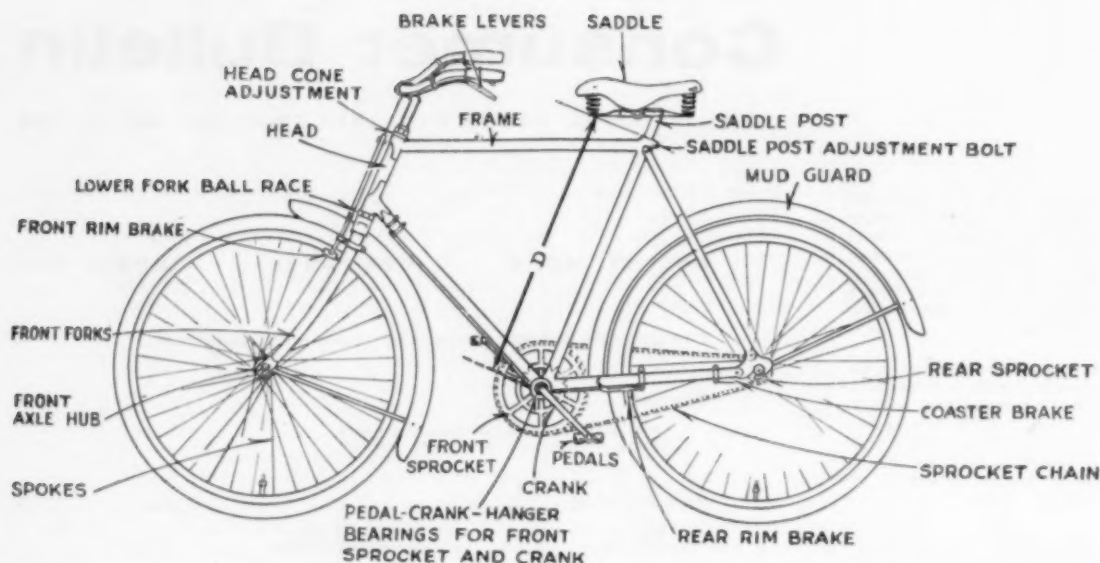


Figure 1—The principal parts of a bicycle. Distance D is the "frame size." This diagram shows rod-controlled rim brakes; many of the bicycles in the current test had the caliper type shown in Figures 3 and 4.

BICYCLES

FOR MANY an American youngster, the bicycle is an essential and much enjoyed means of transportation. As a matter of fact, outside America, which has 75 percent of the world's automobiles to serve 6 percent of the world's population, bicycles are depended upon by persons of all ages as an indispensable method of getting about. This is no doubt one reason why foreign bicycles, especially those made in England, have on the whole been better designed and better made than the American variety.

Bicycling as a form of exercise can make an important contribution to health. All too many, nowadays, use automobiles for every trip, even of a few city blocks. Cycling (or walking, for that matter) on these relatively short excursions can help to provide the activity that is essential for good health; it is well established that young Americans do not obtain sufficient exercise for good muscular development, stamina, and endurance.

Consumers' Research covers 12 bicycles in its present report. Of these, nine were made in Europe; two were assembled in the United States but included a number of imported parts; and one was essentially U.S. made. Four of the bikes were "20-inchers" (outside diameter of tires, 20 inches) intended for use by small children. The

remaining eight were 26-inch machines suitable for teen-agers and adults.

Sizes

The size of a bicycle is often given in terms of its tire diameter; this dimension gives a rough idea of the size of the machine. However, a much better measure to use in selecting a machine to fit a given person is the *frame size*. This is the length of a straight line from the axle about which the pedals turn (the "hanger") to the top of the frame where the seat post is inserted—not to the top of the seat. (See diagram, Figure 1.) The recommended rule to determine the correct frame size is to subtract nine inches from the rider's inside leg measurement—crotch to heel. (For a man or boy, the inseam length for slacks or trousers is about one inch less than the inside leg length; thus the proper bicycle frame size is about eight inches less than the inseam length of well-fitted slacks.)

Saddle height and handle bar position are adjustable on all bicycles. These adjustments make it possible for one to use a bike that is a little too small by the frame size rule just given. A bike that is too large is likely to be uncomfortable, hard to manage, and thus dangerous to ride. For small children, pedal blocks may be used so that

the feet may reach the pedals of a bike that would otherwise be too big, but this will be suitable only for a beginner. There are risks sometimes connected with the use of the blocks.

Care should be taken to get the right frame size for an adult. For a youngster whose measurements can be expected to change quite rapidly, avoid the temptation to select a much oversized bike that the child can "grow into."

Saddle height of a bike should be adjusted so that, when the rider is astride the seat, his toes, but not his heels, can touch the ground. Another test for saddle height is that the rider should be able to follow the pedals around with his heels without stretching. The handle bar is then tilted up or down and adjusted to the proper height for comfort. Similarly, the saddle tilt is adjusted to suit individual preference.

The nuts and bolts to be loosened for all but one of these adjustments are fairly evident as one examines a bicycle. The one exception, which is quite likely to be puzzling until explained, is the adjustment for height of the handle bar as it is found on almost all machines. The handle bar is attached at its center to the "gooseneck," a piece which fits down into the tubular "head" over the front wheel. (See diagram, Figure 1.) At the top of the gooseneck directly over the head is the top of the expander bolt which holds the gooseneck in place. (See photograph, Figure 2.) To raise or lower the gooseneck and thus the handle bar, or to turn the handle bar from side to side for proper alignment with the front wheel, unscrew the expander bolt so that its top moves up about a half inch. Then *tap the bolt down*, using a wood or plastic mallet or a block of wood. This releases the bevel lock or taper plug inside the head and the gooseneck is freed to move up or down. (Never move the gooseneck so far upward that less than 2½ inches of its length remains inside the head.) When the gooseneck has been positioned as desired, retighten the expander bolt firmly.

Once the bike has been selected, and adjusted for fit and comfort, don't assume you can ride off without further thought for maintenance and care. Every bearing is adjustable. Each can be too tight and inhibit free motion, or too loose, causing sloppy fit and operation. Each spoke is adjustable as to tension, and as many bicycles are shipped from factories most spokes are too loose. *It is not safe to assume that a brand new bicycle has been properly adjusted.* Bikes as they come from the factory are usually somewhat out of adjustment. The dealer should see to it that a new machine is gone over by a qualified bicycle mechanic. It is quite likely that this will not be

done if the bike is bought from a discount store, mail-order firm, or department store—in fact, from any other place than a bicycle shop. The buyer who has any doubts about the adjustment of a new bike will find it well worth while to have it examined and adjusted by a competent bicycle mechanic; a fair charge for such service (if nothing is found to be broken or basically out of order) would be from \$3 to \$5.

A bicycle requires regular maintenance, too, after it is put into use, much as a car does. A good home mechanic can keep a bike in satisfactory condition if guided by a person of experience or by a detailed service manual. Caution: Only an expert should disassemble a rear hub, whether



Figure 2—The arrow shows the head of the "expander bolt" which holds the "gooseneck" in place.



Figure 3—A sharp forward-projecting ornament on the front mudguard of the Bianchi was an unnecessary hazard. A handy owner would have little difficulty in removing it. The photograph also shows details of the caliper-type rim brake.

multi-speed, coaster brake, or combination type; anyone else may find it necessary to hire a bicycle mechanic to put it together again. Another precaution, especially with foreign-made bikes, is to watch out when disassembling for loose bearing balls that can fall out and pick up dirt and grit, or get lost. (If this does happen, though, there's no cause for alarm; replacement balls of most sizes are available from bike shops and are cheap.)

In evaluating the bikes, Consumers' Research examined each machine for details of construction and safety features, "road tested" each bike, and obtained an idea of how free its bearings were by measuring how far it would coast freely. All trials were made after the bicycles had been carefully adjusted by an expert mechanic.

Brakes

Brakes that operate satisfactorily are, of course, essential for safe use of any bicycle. There are two types of brakes in common use—coaster brakes and caliper-type rim brakes. The coaster brake is the commonest type on domestic bicycles. Caliper-type rim brakes are found on many imported machines, and are beginning to appear also on American lightweight bikes, which in the last few years have copied European design features to some extent.

The coaster brake mechanism is enclosed in the rear wheel hub, and its braking action, applied to the rear wheel only, is actuated by reverse pressure on the pedals. Rim brakes operate on both front and rear wheels, and are operated by levers mounted on the handle bars near the handgrips. (See Figure 4.) The braking action of rim

brakes is on the whole more satisfactory, and the mechanism is so simple that it is less subject to breakdown and much easier to repair if there is trouble than that of a coaster brake.

Rim brakes do require, however, some judgment and skill in their operation; for example, if the front wheel brake alone is suddenly applied, the bike and the rider may catapult forward over that wheel. Rim brakes are so effective that they must in any case be used with care not to brake excessively. When rim brakes or the wheel rims are wet, however, a $1\frac{1}{2}$ to 4 times greater stopping distance is required than when the brakes are dry, according to a British study of safety aspects of bicycles. In some cases, coaster brakes are also susceptible to loss of effectiveness under wet conditions. These factors must be taken account of to avoid undue risks in bike riding in bad weather.

The levers of caliper brakes may be difficult to handle by children or others with small hands. For these reasons, children's bikes are usually equipped with the coaster-type brake. A few machines, for example, the *Automoto*, are equipped with a coaster brake for the rear wheel and rim brakes for the front wheel.

Gearshifts

Many foreign bicycles and some lightweight domestic machines of the "foreign type" have multiple speed gears—usually three speeds, "low," "normal," and "high." Five of the 26-inch machines tested were so equipped; the two with no gearshifts were *Bismarck* and *Rollfast*. (None of the small children's bicycles had gearshifts.) The "low" gear is a real help in climbing hills; on an average, the push required to propel a bike is about 30 percent less in low than in normal gear. Correspondingly, the pedals must be rotated faster to maintain a given forward speed.

The "gear" of a bicycle is a specialized term, peculiar to the bicycle industry. It is a number so defined that it is roughly equivalent to the number of feet the bike is propelled by four complete revolutions of the pedals without any coasting. (More exactly, the gear is 95 percent of this distance.) With a low "gear" there is relatively easy pedaling and slow speed; a high "gear" gives higher speed at the expense of harder pedaling. On three-speed gearshifts, the average normal gear is about 65, low around 45, and high 85. The two 26-inch bicycles without shift each had a gear of 63. The four bicycles with 20-inch wheels had much lower gears, of course—ranging from about 36 to 44. In selecting a fixed-gear bike, pick a lower value for ease of operation, especially on hills and against wind, a higher value for more speed and more vigorous use of the muscles.

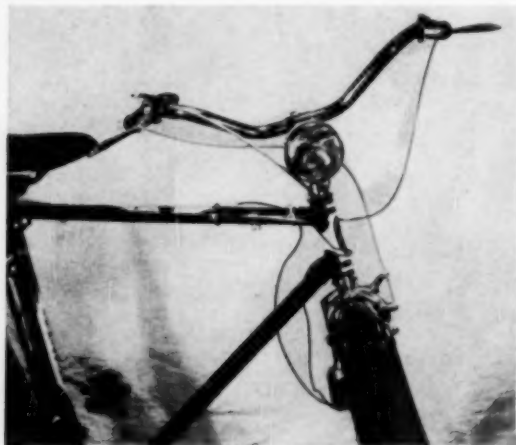


Figure 4—Front of the J. C. Higgins, showing control levers near the handgrips; these levers control the caliper-type rim brakes. The front wheel brake mechanism is also visible.

Ratings of 12 bicycles

In the listings which follow, the prices given are those paid by Consumers' Research—the lowest prices we could readily find at cut-rate sources in the New York area. These are not "list" prices, and may bear little relation to what a consumer must pay in his own neighborhood—but the prices given do show something of the relative prices likely to be encountered. (In judging them, one must take into account the extra equipment included, as indicated in each listing.) The sensible buyer will naturally shop around for the best price and may find it worth while to do a bit of bargaining with the seller. But, in deciding upon the type of dealer from whom to buy, keep in mind that proper adjustment of the bicycle before delivery to you is worth \$3 to \$5, and convenient availability of expert service and parts in your own neighborhood will be of great value in the future.

Country of origin is given for all the listings; names of manufacturers and American distributors are given where known.

Bicycles with 26-inch wheels, for larger children and adults

A. Recommended

Bianchi Sport (Made in Italy; Edoardo Bianchi, Milan) \$40. Man's, frame size 21 in. Weight, 36 lb. *Styria* hub, three speeds, gears 46, 60, 81. Rim brakes. The sharp ornament on the mudguard presents a needless hazard, but this could be removed by the purchaser. (See Figure 3.) Equipped with lights, generator, pump, tool bag, kickstand. No tools.

Hercules (Made in England; Hercules Cycle & Motor Co., Ltd., Birmingham; replacement parts available from Hercules Div., The Cleveland Welding Co., 23 W. 23 St., New York 10) \$47. Woman's, frame size 19½ in. Weight, 40 lb. *Hercules* hub, three speeds, gears, 48, 64, 85. Rim brakes. Equipped with lights, generator, pump, large tool bag, kickstand. Cleverly designed combination wrench suitable for needed adjustments, and one oiling can.

J. C. Higgins (Made in Austria; U. S. distributor, Sears, Roebuck & Co., Cat. No. 1—4628) \$43.88, plus shipping. Man's, frame size 21 in. Weight, 38 lb. *J. C. Higgins* hub (similar in appearance to the *Styria*), three speeds, gears 50, 66, 88. Rim brakes. Equipped with lights, generator, pump, tool bag, kickstand. No tools.

Raleigh (Made in England; Raleigh Industries, Ltd.) Similar to the *Rudge* listed below.

Rudge (Made in England; Raleigh Industries, Ltd., Nottingham; distributed by Raleigh Industries of America, Inc., 687 Boylston St., Boston) \$46. Woman's, frame size 19½ in. Weight, 35 lb. *Sturmey Archer* hub, three speeds, gears 47, 65, 91. Rim brakes. Equipped

with pump and large tool bag. Three special wrenches, suitable for needed adjustments. ¶The *Humber* is made by the same manufacturer and is a similar bicycle.

B. Intermediate

Automoto (Made in France; distributed by Andrew Fisher Cycle Co., Inc., 240 Madison Ave., New York 16) \$45. Man's, frame size 21 in. Weight, 38 lb. *Sturmey Archer* hub, three speeds, gears 49, 66, 88. Rim brakes for front wheel; coaster brake for rear wheel. Equipped with pump, tool bag, rear luggage rack, lights, and generator. Two wrenches (not sufficient for all needed adjustments), three tire irons, and a set of patches for tire tubes.

Rollfast Deluxe (Made in U.S.; D. P. Harris Hardware & Mfg. Co., 99 Chambers St., N.Y.C.) \$43. Woman's, frame size 18 in. Weight, 44 lb. Single speed, gear 63. *Perry* (English) coaster brake. Equipped with headlight, electric horn, kickstand, rear luggage rack, and "tank." No tools.

Bismarck (Made in Germany) \$33. Man's, frame size 18 in. Weight, 38 lb. Single speed, gear 63. *Perry* coaster brake. Equipped with kickstand, luggage rack over rear wheel. Details of welding, construction, and finish considered somewhat below average. One wrench for coaster brake; no tools for other parts requiring adjustments.

Bicycles with 20-inch wheels, for small children

A. Recommended

Hercules Royal Prince (Made in England; Hercules Cycle & Motor Co., Ltd.) \$32. Girl's, frame size 16 in. Weight, 26 lb. Single speed, gear 40. *Perry* coaster brake. Equipped with tool bag and rear luggage rack.

B. Intermediate

Metasco Jet (Made in Western Germany) \$25. Boy's, frame size 13½ in. Weight, 28 lb. Single speed, gear 44. *Komet* coaster brake. Frame welding considered somewhat below average.

Rollfast (Made in U.S.; D. P. Harris Hardware & Mfg. Co.) \$29.75. Boy's, frame size 15 in. Weight, 30 lb. Single speed, gear 44. *Perry* coaster brake. Equipped with kickstand.

Huffy Mainliner (Made in U.S.; Huffman Mfg. Co., Dayton 1, Ohio) \$39. Girl's, frame size 13 in. Weight, 41 lb. Single speed, gear 36. *New Departure* coaster brake. Equipped with headlight, "tank," rear luggage rack, removable "training wheels." The solid rubber ("semipneumatic") tires on bike gave a rough, uncomfortable ride; all other bikes in the test had air-filled tires. (Semipneumatic tires though punctureproof should be considered only if the avoidance of the possibility of flat tires is considered more important than a comfortable ride and reasonably light weight of the bicycle.) The *Huffy* was much too heavy for a young child—the second heaviest machine in all those tested, including the 26-inchers.

Tape recorders



Bell & Howell 775



Pentron NL-3



Ampex 758

WHETHER YOU SPEND \$100 or \$1000 for a tape recorder, it is likely that you will have many enjoyable hours of listening pleasure from your own recordings. If you want a tape recorder primarily for high-fidelity reproduction of music from commercially available pre-recorded tape, you will need a recorder of the type used by professionals, broadcast stations, and others who can afford top-grade equipment. Such a recorder will cost you \$500 to \$600 or more.

The recorders discussed and rated in the present article are not suitable for high-fidelity reproduction. They fall in the under-\$300 category, and are meant for those whose requirements do not call for the very best possible musical reproduction. These recorders, however, should be satisfactory for almost any use to which a recorder is ordinarily put by the average user in the home or office, whether it be recording some program of special interest from a radio broadcast, or preserving baby's first words for fond aunts, uncles, and grandmas.

Only a few of the so-called hi-fi record players and tape recorders are really high fidelity, although most do offer a quality of reproduction far above that available from the ordinary home radio or phonograph. Because of the increasing popularity of "hi-fi," and with it a general lowering of "acceptable" standards, many audio enthusiasts are seeking a new approach to musical reproduction which will again give them the prestige that attaches to the owner of equipment that is unique and extraordinary and hence impressive to friends and acquaintances. Stereo-

phonic reproduction, or "stereo" as it is commonly called, is attractive to people in this category. By employing two (or more) independent channels from the recording microphones to the reproducing loud-speakers, stereo gives the illusion of sound emanating not from a single source, but from all parts of an orchestra or chorus. Stereo sound thus gives an enhanced illusion of reality. Either a dual-track tape or a new kind of disk may be used as the primary source of stereo music.

Stereo sound reproduction using a single-disk recording, as sold to ultimate consumers, must be considered to be in a developmental stage at this time; the consumer should not be taken in by claims to the contrary. Certainly, it is too early for the enthusiast with limited means to risk any financial outlay for the equipment. Stereo tape recordings, on the other hand, are available for those who can afford them (about \$10-\$20 for a single tape which will last about 1/2 hour), and some are really awe-inspiring to listen to if reproduced on the right equipment. (The Ampex stereo system, for example, costs \$850 or so.) None of the tape recorders reported in the present study would be

suitable for real high-fidelity stereophonic sound, because of deficiencies in their self-contained amplifier and speaker systems which would be used for one of the two channels required. And even if separate amplifiers and speakers were employed (two of each are needed for stereo) and the recorder used only as a so-called "tape deck" (for tape playing only), the resulting reproduction while giving a novel effect would not be satisfactory to persons familiar with the fine illusion of reality created by a true high-fidelity stereophonic system.

It is a commonly accepted fact that, to obtain true high-fidelity reproduction, whether from a single source of sound or stereophonic, and whether from records or tape, one must employ above-average-quality equipment throughout the system. Even if one is willing to accept a compromise with high quality, there are still certain minimum qualifications which must be present if even reasonably good fidelity without noticeable distortion is to be attained. One is the employment of an audio amplifier which has *push-pull output*. The table on page 12 shows which recorders of the group tested had the push-pull output circuit. Another necessary requirement is that the recorder be capable of reproducing faithfully a range of tones extending from 60 to 10,000 cycles. None of the recorders tested met this requirement when used with the speaker system included in the recorder itself.

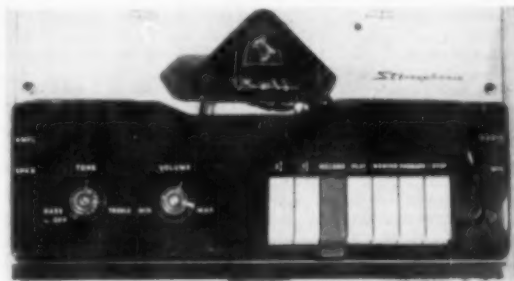
If it is your intention to use any one of these recorders with pre-recorded tape and you desire reasonably good musical quality, the recorder user will have to buy a separate speaker system—or use the one in your present high-fidelity recording equipment if available and of good quality.

Indeed, you will likely find it preferable to use a separate speaker and amplifier, for an output of 10 watts with low distortion is considered necessary for even medium-fidelity reproduction, and none of the amplifiers in the recorders tested approached that capability. Obviously, if you own a separate amplifier and speaker of good quality, your choice of a tape recorder need not be limited to one which comprises a push-pull amplifier, provided there is an output connection from the recorder for use with an external amplifier.

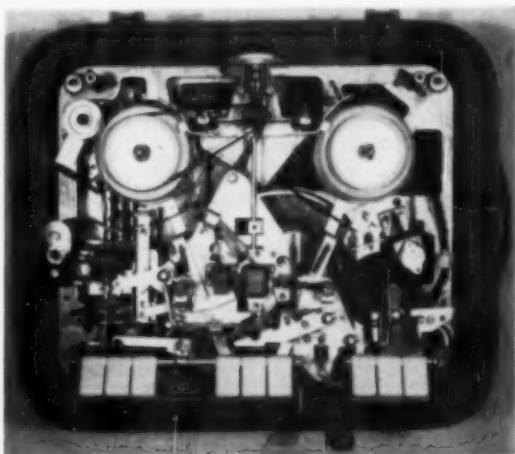
Safety in use

In a previous report on tape recorders published in August 1955, three of the 11 recorders listed received *C-Not-Recommended* ratings because they had excessive or dangerous electrical leakage currents. The amount of leakage current is a measure of the degree of shock hazard connected with the use of an appliance. A leakage current in the

range 0.6 to 1 milliamperes is excessive; above 1 milliamperes is considered definitely dangerous. We are glad to report that 11 of the 12 recorders included in this report had leakage below the 1 milliamperes limit. The only recorder which had leakage (1.6 milliamperes) above this limit was the *Silvertone*. While this amount of leakage was not judged sufficient to cause a dangerous shock, it presented a definitely unsafe condition which would be clearly undesirable in the case of a small child if it should touch or handle the equipment. The hazard was especially great because the leakage current was present not only at several metallic areas on the case, but also at the metal shell enclosing the microphone, a part that would be firmly grasped by the hand when the equipment is used. This amount of leakage is more than sufficient to cause one to react sharply and suddenly and thus possibly incur serious bodily injury. Such a situation might occur par-



The Bell Stereophonic Model BT2051B had a very neat arrangement for the controls and jacks. All functional controls were located at the front at the top of the tape deck and were well identified.



The controls on the Norelco were very easy to operate but the mechanism beneath the deck was most complicated.

SUMMARY OF DATA ON TAPE RECORDERS

	Ampco 758	Bell BT2051B	Bell & Howell 775G	Knight 4010	Nonico EL3516	Pentron NL-3	RCA 8-TR-2	Revere T-1100	VM 714	Wilcox Gay 772	Wollensak T-1500
Weight, pounds	31.2	31.0	36.3	33	30.0	39.5	31.2	33.0	33.0	33.2	22.3
Material of cabinet	Wood	Wood	Plastic and Metal	Wood	Wood	Wood	Wood	Metal	Wood	Wood	Metal
Provision for monitoring	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes
Method of tape indexing	Counter	Arcs	Counter	Counter	Counter	Counter	None	Counter	Dial	Pointer	Counter
Output for external speaker	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Output for external amplifier	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Number of speakers	2	1	2	3	1	4	1	2	2	3	1
Muted rewind	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	No	Yes
Level indicator	Magic Eye	Neon	2 Neon	2 Neon	Magic Eye	Meter	2 Neon	2 Neon	Magic Eye	2 Neon	2 Neon
Storage space	Good	Good	Good	Good	Poor	Good	Good	Good	Good	Good	Poor
Push-pull output	No	No	No	Yes	No	Yes	No	No	No	Yes	Yes
Rewind time, seconds*	70	28	55	95	80	75	90	70	65	90	90
Power consumed, watts	120	90	95	110	70	95	90	80	120	105	75
Useful audible frequency limit low end (c.p.s.)	90	50	90	90	90	70	60	90	90	70	85
high end (c.p.s.)	9000	8500	8000	9500	7500	7000	6000	6500	7500	7500	8000
Useful amplifier frequency limit low end (c.p.s.)	60	50	50	90	50	60	50	70	50	50	50
high end (c.p.s.)	12,000	13,000	6000	9500	14,000	6500	6000	7500	6500	7000	9000
N.A.R.T.B. playback	V.G.	V.G.	V.G.	Good	V.G.	Good	Good	V.G.	V.G.	V.G.	V.G.
Accuracy of speed, percent	1.4 f	0.0	0.8 f	1.0 f	1.2 f	0.5 f	1.0 s	1.6 f	1.5 s	0.7 s	1.3 f
Braking	V.G.	Sat.	V.G.	V.G.	V.G.	V.G.	V.G.	Sat.	V.G.	V.G.	Sat.
Ease of operation	Good	V.G.	V.G.	Sat.	V.G.	Sat.	V.G.	Good	V.G.	Sat.	Good
Workmanship	V.G.	V.G.	V.G.	Good	V.G.	Good	Good	V.G.	V.G.	Good	Good
Ease of servicing	V.G.	V.G.	Good	V.G.	Good	V.G.	Good	Good	V.G.	V.G.	Good
Instruction book	Good	V.G.	V.G.	Sat.	V.G.	Sat.	Sat.	Good	Good	V.G.	V.G.
Maintenance manual cost, \$	1.50	Free	—	Free	1.00	0.50	—	Free	—	Free	Free

* For 5-inch reel of regular tape.
c.p.s.—cycles per second; Sat.—satisfactory; V.G.—very good; f—fast; s—slow; dash (—)—information not available.

ticularly when the recorder is used out-of-doors, as on a patio or close to a swimming pool.

It should be noted, however, that any portable electronic device may present rather more than the ordinary hazard of shock especially if it has been used for some time, or has suffered rough handling or abuse. Such a shock may be received from the metal deck of a tape recorder, or from

the sheet metal or cast metal sides of the cabinets when present. Consumers' Research recommends, for this reason, that the owner of such equipment would be well advised to check it regularly or have it checked by a competent serviceman, to make sure it is electrically safe. A small neon glow-type tester, called *Saf-T-Probe*, available from K-G Electronics Corp., Chicago 14, for \$2.49,

An explanation of some of the information given in the table of data on page 12

Muted rewind is desirable. When not present, it is necessary to turn down the volume control to avoid unpleasant noises when rewinding a tape.

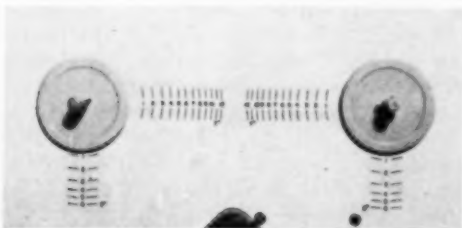
Level indicator tells whether you are speaking into the microphone too softly or too loudly. A meter is best, but is used principally only on professional-type equipment.

Useful audible frequency limits were estimated by ear from a tape recorded by using the "radio" input of each recorder, and do not include deficiencies that would likely be characteristic of the particular microphones furnished.

N.A.R.T.B. playback gives an indication of the flatness of the response (judged by ear using a correctly compensated frequency test tape) from the inbuilt speaker system when pre-recorded tapes were played. A flat response from the test tape is desirable.

Accuracy of speed is relatively unimportant in so far as recordings made on your own machine are concerned. A difference in pitch was clearly noticeable, however, when a tape was recorded on the RCA and played back on the Ampro.

would serve to detect dangerous leakage currents in excess of about 2 milliamperes if, as would usually be true, the voltage causing the leakage is higher than about 60 volts. This tester should be used with the plug on the appliance connected and then with the prongs of the plug reversed in the receptacle (since an appliance may sometimes be safe with one direction of the plug, and highly dangerous when the plug is simply taken out and inverted and replaced in the socket); the test should also be made with the appliance switch in both the "on" and "off" positions. Warning regarding the potential shock hazard should be given, especially to all who use any recorder out-of-doors, particularly near water, at the edge of a swimming pool, on wet or damp concrete, stone, brick or terrazzo flooring, or, of course, on damp ground or grass.



Various methods of tape indexing are employed. CR prefers the counter shown at the right to arcs marked on the tape deck as shown at the left.

Prices

Nowadays, the price you pay for a tape recorder will often be far below the list price set by the manufacturer. With a little shopping, one may find that almost any model included in the listings can be purchased at a substantial discount, ranging from 10 to even 30 or 40 percent below the manufacturer's so-called list price. We have tried to help with this problem by including in the listings the regular list price of each recorder and, when available, the lowest price in dollars at which that model has been offered by some mail-order or other supplier such as a large discount house. In some cases, perhaps, a careful and persistent shopper may obtain even lower prices than the lowest ones we have shown.

A. Recommended

Bell & Howell, Model 775G (Bell & Howell Co., 7100 McCormick Rd., Chicago 45) \$199.95; \$149. A very satisfactory recorder. The maker had given much thought to even minor details of construction and design. Fairly natural reproduction of the voice.

Knight, Model 4010 (Allied Radio Corp., 100 N. Western Ave., Chicago 80) \$129.95, plus shipping charges (Allied Radio Cat. No. 91RZ750). A very satisfactory recorder in most respects. The record-lock lever was positioned at the front beneath the piano-key-type controls and was judged not as easy to operate as some others. The push-pull amplifier did not put out its rated output of 8 watts, but was preferable to a single-ended output stage if reasonably loud output volume was desired. Fairly natural reproduction of the voice.

Norelco Continental, Model EL3516 (North American Phillips Co., Inc., 230 Duffy Ave., Hicksville, L.I., N.Y.) \$269.50. Judged an excellent recorder, overall, and the only recorder of the ones tested which provided an extra tape speed of $1\frac{1}{8}$ inches per second. Very convenient to use. The versatility and convenience of this recorder were obtained at some loss of internal simplicity (see photo, page 11). We advise purchasers to assure themselves of the availability of adequate and prompt servicing facilities in or near their own city. (There have been reports in the past that, on some foreign-made recorders, servicing involved considerable delay.) This recorder gave natural voice reproduction.

VM, Model 714 (VM Corp., Benton Harbor, Mich.) \$225; \$160. This model recorded and erased monaurally but included provision for playing stereo tape with



either "stacked" or "staggered" heads (simple switch control). Two preamplifiers included but the user would need a separate amplifier and speaker system. An excellent recorder, overall, combining ease of control and several desirable features. This recorder gave natural voice reproduction.

Wollensak, Model T-1500 (Wollensak Optical Co., 320 E. 21 St., Chicago 16) \$199.50; \$140. This recorder was the most compact and lightest of all those tested, and was very satisfactory in all respects. The amplifier, rated at 10 watts output, was capable of supplying only 6 watts at reasonably low levels of distortion. Fairly natural reproduction of the voice.

B. Intermediate

Ampro, Model 758 (Graflex Inc., Rochester 3, N. Y.) \$249.95; \$150. Well designed and very satisfactory, overall. Push keys actuate solenoids which determine function; this is a desirable arrangement, because it does eliminate or reduce mechanical complications. Leakage current (0.8 ma.) was excessive. The recorder would otherwise have received an *A-Recommended* rating. Natural reproduction of the voice.

Bell, Model BT-205IB (Bell Sound Systems, Inc., 555 Marion Rd., Columbus 7, Ohio) \$224.50. This model recorded and erased monaurally but included stacked heads and two preamplifiers which provided stereophonic playback if used with a separate amplifier and speaker. A very satisfactory recorder and the only one tested employing three motors. This construction eliminated mechanical complication in the controls, desirable from the standpoint of servicing, but it introduced certain difficulties in the matter of braking on fast-forward and rewind. In other respects was worthy of an *A-Recommended* rating. CR considers a counter much more useful than the method of indexing employed (see photo, page 13). This recorder gave natural reproduction of the voice.

Pentron, Model NL-3 (Pentron Corp., 777 S. Tripp Ave., Chicago 24) \$189.95. Judged a very satisfactory recorder with several desirable features. The single-knob control which combines play, record, rewind, and fast-forward functions was judged somewhat difficult to operate as compared with the key-type controls present on several other makes. This recorder gave natural voice reproduction.

RCA, Model 8-TR-2 (Radio Corp. of America, RCA Victor and "Victrola" Div., Camden 8, N. J.) \$179.95. Lacked some of the features which many users would desire in a tape recorder (see tabulation). Very easy to operate, with a minimum of controls. Excessive leakage current (0.8 ma.). Fairly natural reproduction of voice.

Revere, Model T-1100 (Revere Camera Co., 320 E. 21 St., Chicago 16) \$169.50; \$118. This recorder has the advantages of neat appearance and compact design. The knob control for play and record, and lever control for fast-forward and reverse functioned satisfactorily. Sides of case were of perforated metal (see text). Fairly natural reproduction of the voice.

Wilcox Gay, Model 772 (Wilcox-Gay Corp., Charlotte, Mich.) \$230; \$130. Similar to the *Knight 4010* and the general comments regarding the *Knight 4010* apply. The *Wilcox Gay* was the only recorder which employed permanent-magnet erase, which is judged less desirable than the electromagnetic erase. When all test results were considered, the *Knight* was judged preferable. Fairly natural reproduction of voice.

C. Not Recommended

Silvertone, Model 8074 (Sears-Roebuck's Cat. No. 57-08074) \$149.95, plus postage; \$130. In the initial electrical checks on this machine, the leakage current was found to be 1.6 ma. Since this amount of leakage current is definitely above a safe limit for an appliance of this kind, no further tests of the recorder were made.

Emendations to Consumer Bulletin

Cameras

Page 27, Feb. '58 Bulletin

Contaflex III. This camera was erroneously stated to be made in the Soviet Zone of Germany. Actually the *Contaflex III* is made in Stuttgart, West Germany, formerly the U.S. Zone of Germany.

Electronic organs for the home, with ratings of spinet models

Page 23, Col. 2, Feb. '58 Bulletin

The comment on the *Allen* spinet organ regarding a past history of service troubles was in error. The concluding sentence of the listing of *Allen* should be corrected to read as follows: This organ, brought out in the summer of 1957, is deserving

of an *A-Recommended* rating on the basis of musical quality. It has not yet been in use for a sufficient period, however, to warrant an *A-Recommended* rating without qualification.

Clinical thermometers

Page 31, Dec. '57 Bulletin

CR has been advised by Eisele & Co., manufacturers of the *Eco* thermometers, that the prices given for the *Eco Findex No. 143* and *Eco Service* thermometers are not typical of their customary selling prices. According to the manufacturer, a drugstore should sell the *Eco Findex No. 143* thermometer at about \$2 and the *Eco Service* thermometer at about \$1.50, instead of the higher prices mentioned in the December BULLETIN.

Studebaker Scotsman



Specifications

The *Scotsman* has the distinction of being the lowest-priced full-size American car. The four-door sedan has a factory-advertised delivered price of \$1874. The two-door sedan is \$1795, and a two-door station wagon is priced at \$2055. These prices include heater, defroster, dealer handling and delivery charges; in addition, the purchaser pays freight charges and state and local taxes, which in New Jersey would amount to from \$50 to \$100. The small sales of this car (about 20,000 1957 *Scotsmen* were sold) would seem to give some support to the oft-repeated claim that Americans will not buy stripped-down "economy" cars. The *Scotsman* is essentially a *Champion* with a minimum of chrome, and a simple dashboard. Its heater is of the recirculating type, with no fresh-air intake. The car is good-looking, pleasant to drive, and better in some ways than many cars with excessive chrome, sharp hood and fender ornaments, fancy lamp arrays, and other negative contributions to safety. The car tested by CR was equipped with over-drive (\$100 extra) and 3.54 to 1 rear axle ratio.

The dash controls were identified, but not illuminated for easy seeing at night. The glossy black enamel finish of the top of the dash caused bad reflections, and undesirable reflections were noted also from the shiny spokes of the steering wheel. The heater fan was exceptionally and disturbingly noisy at its higher speed. No hood or fender ornaments were used (omission of these is a very desirable improvement). The trunk was poorly arranged, with very little free and level floor space, because the spare tire was mounted flat on the floor. No floor mat was provided in the trunk, and sides and back of the trunk were not covered; the trunk was also not watertight. Wheel nuts had left-hand threads on the left side,

Taxable horsepower	21.6
Taxable weight, pounds	2735

Engine

Cylinder arrangement	6-cylinder, L head
Piston displacement, cubic inches	185.6
Rated horsepower at stated rpm.	101 at 4000
Compression ratio	7.8 to 1
Oil filter	Partial flow (optional)
Gasoline required	Regular

Chassis and body

Wheelbase, inches	116.5
Over-all length, inches	202
Width, inches	75.8
Height, inches	58.0
Tires	6.40 x 15
Brake factor*	42
Minimum road clearance, inches	6.5
Turning diameter, feet	39.5
Steering wheel turns, full left to full right	4.75

Other details

Battery	12-volt 50-amp.-hr.
Gasoline tank, gallons	18
Windshield wipers	Vacuum
Curb weight of car tested, pounds	2910

* Brake factor is a number indicative of the probable relative life of brake linings.

right-hand threads on the right side (a feature considered very desirable from the safety standpoint).

Performance on road tests

The 101-horsepower engine would be considered underpowered by today's American standards, with many engines up to 300 to 400 rated horsepower; yet the *Scotsman's* performance in acceleration was ample for the conservative driver and indeed above that of the best of the small foreign cars reported in the January issue. Acceleration times were: from 0 to 30 miles per hour, 6.6 seconds; from 0 to 60, 22.8 seconds; from 20 to 50, 16.1 seconds; from 40 to 60, 14.0 seconds. (By comparison, the *Vauxhall Victor* in accelerating from 20 to 50 miles per hour required 17.1 seconds, and from 40 to 60 miles per hour, 14.6 seconds; the typical American big-three car requires only about 6 seconds in the 20-50 and 40-60 ranges.)

Gasoline mileage under test conditions

At a constant speed of 50 miles per hour, the gasoline mileage was 20.4 miles per gallon (24 miles per gallon with overdrive engaged), considerably

lower than that obtained by the far lighter small foreign cars, such as *Renault Dauphine* (38 m.p.g.), *Vauxhall Victor* and *Opel Rekord* (about 32 m.p.g.).

Speedometer errors

Indicated speed, m.p.h.	30	50
Actual speed, m.p.h.	28	47

Odometer

Approximately 4 percent fast.

Braking

The brakes performed satisfactorily, with no abnormal brake fade.

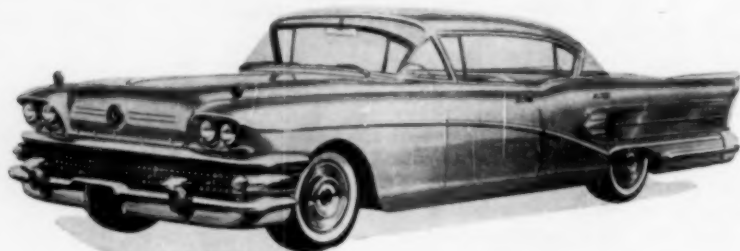
Riding and handling qualities

Riding quality was judged fairly good, about equivalent to that of the 1958 *Ford*. The car cornered well with a minimum of lean on turns. There was a marked hiss at high speed, judged to be due to the very small air filter on this car.

A. Recommended (tentative)

Studebaker Scotsman. Judged a satisfactory car for those who want a full-size American-style car at a relatively low price, without frills or extra gadgets and with somewhat better gasoline economy than is afforded by almost all the other American cars.

Buick



We are pleased to note that the rated horsepower of *Buick* cars has not been raised this year. All models use the same basic 364 cubic inch V-8 engine, rated at 250 horsepower with a 9.5 to 1 compression ratio on the *Special*, and 300 horsepower with a 10 to 1 compression ratio on all the other models. The new *Flight Pitch Dynaflo* transmission which is standard equipment on the *Roadmaster* and *Limited* series and optional on the *Special*, *Century*, and *Super* has no "low" position on the shift quadrant. Instead, it has a "grade" position which may be engaged at speeds up to 45 miles per hour. In this position, both the engine and converter are used to supply a braking force to help control speed in descending hills.

The car tested by Consumers' Research was a *Super* four-door *Riviera Hardtop* with *Dynaflo* transmission, power brakes, power steering, and

Air-poise suspension. There was no hood ornament, but the familiar V-in-a-ring ornament was used on each front fender. (The manufacturers claim that the presence of these makes it easier to gauge distances in traffic.) The useless bullet-shaped protrusions on the bumper unfortunately have not been eliminated. Headroom and leg room were adequate. The overhang of the dash obscures some of the instruments for a tall driver. There were marked reflections in the windshield from the top of the dash. Buick, we are glad to note, has used an ammeter and oil pressure gauge instead of indicating lights used by many makers.

Performance on road tests

Although not quite as fast as the *Pontiac* in acceleration, the *Buick*, too, is greatly overpowered from the standpoint of the conservative driver.

Buick specifications

	Special	Century	Super	Roadmaster	Limited
Taxable horsepower	54.45	54.45	54.45	54.45	54.45
Taxable weight, pounds	4115	4240	4500	4670	4710
Engine					
Cylinder arrangement	V-8 valve-in-head	V-8 valve-in-head	V-8 valve-in-head	V-8 valve-in-head	V-8 valve-in-head
Piston displacement, cubic inches	364	364	364	364	364
Rated horsepower at stated rpm.	250 at 4400	300 at 4600	300 at 4600	300 at 4600	300 at 4600
Compression ratio	9.5 to 1	10 to 1	10 to 1	10 to 1	10 to 1
Oil filter	Full flow	Full flow	Full flow	Full flow	Full flow
Grade of gasoline required	Regular*	Premium	Premium	Premium	Premium
Chassis and body					
Wheelbase, inches	122	122	127.5	127.5	127.5
Over-all length, inches	211.8	211.8	219	219	227
Width, inches	78	78	80	80	80
Height, inches	57.6	56.9	59.4	59.6	59.6
Tires	7.10 x 15	7.60 x 15	7.60 x 15	8.00 x 15	8.00 x 15
Brake factor**	45	44	42	40	40
Minimum road clearance, inches	6.1	6.4	6.4	6.6	6.6
Turning diameter, feet	43	43	44.5	44.5	44.5
Steering wheel turns, full left to full right	5	5	4 (power steering)	4 (power steering)	4 (power steering)
Other details					
Battery	12-volt 70-amp.-hr.	12-volt 70-amp.-hr.	12-volt 70-amp.-hr.	12-volt 70-amp.-hr.	12-volt 70-amp.-hr.
Gasoline tank, gallons	20	20	20	20	20
Windshield wipers	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
Curb weight of car tested, pounds	—	—	4830	—	—

* Premium with Dynaflo.

** Brake factor is a number indicative of the probable relative life of brake linings. The higher the number, the longer the probable life of the brakes.

Buick prices

	Special 4-door sedan	Century 4-door sedan	Super 4-door hardtop	Roadmaster 4-door hardtop	Limited 4-door hardtop
Factory suggested list	\$2700	\$3316	\$3789	\$4667	\$5112
Freight delivered New Jersey	98	99	101	102	110
Dealer handling, etc.	195	195	175	168	150
Total price delivered New Jersey	\$2993	\$3610	\$4065	\$4937	\$5372

Optional equipment: Automatic transmission—Variable pitch Dynaflo, \$220 on Special, standard equipment on all other models; Flight pitch Dynaflo, \$296 on Special, \$75 on Century and Super, standard equipment on Roadmaster and Limited. Radio, \$102; heater and defroster, \$102; power brakes, \$40, standard equipment on Roadmaster and Limited; power steering, \$108 on Special and Century, standard equipment on other models; air suspension, \$188.

Acceleration times were: from 0 to 30 miles per hour, 4.9 seconds; from 0 to 60, 11.3 seconds; 20 to 50, 6.3 seconds; 40 to 60, 5.7 seconds.

Gasoline mileage under test conditions

At a constant speed of 50 miles per hour, the gasoline mileage was 14.75 miles per gallon.

Speedometer errors

Indicated speed, m.p.h.....	30	50
Actual speed, m.p.h.....	29	46

Odometer

Approximately 7 percent fast.

Braking

No abnormal brake fading was experienced.

Riding and handling qualities

Cornering ability was good. The riding qualities

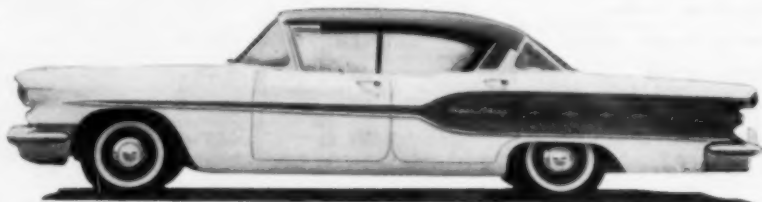
of this car, which was equipped with *Air-poise* suspension, were excellent.

This comment should not, however, be construed as a recommendation of air-suspension systems, for CR advises caution regarding purchase of these on any car until more experience is available from actual use by many car owners. There are many problems of maintenance, and certain vital safety precautions to be taken in jacking up cars with the air-suspension feature.

A. Recommended (tentative)

Buick Super. A comfortable car, very quiet in operation. Well finished and appointed, but, like most cars, much too long for easy parking and, like others in the higher-priced brackets, greatly overpowered (as, indeed, are many in the lower bracket).

Pontiac



Basically the *Pontiacs* are not greatly different from the *Chevrolests*. They run 300 to 350 pounds heavier and are priced \$400 to \$550 higher.

The car tested by CR was a *Super Chief* four-door sedan with *Hydra-Matic* transmission. It was equipped with the optional engine rated at 270 horsepower at 4600 revolutions per minute. The finish was good inside and out. Controls were well located and identified. The top of the dash had a sharp leading edge, which, with the cast horn ring, would present needless hazards in a collision. Massive parking and signal lamps project from the front bumper; this is an undesirable location. There was no hood ornament; there were ornaments on the front fenders but these were not too objectionable from a safety standpoint. Seats were comfortable, and headroom and leg room were adequate for a tall person.

Performance on road tests

The accelerating ability of this car was very high, much too high for safety picking up from slow speed under poor or slippery road conditions. Acceleration times were: from 0 to 30 miles per hour, 3.4 seconds; from 0 to 60, 9 seconds; from 20 to 50, 6 seconds; from 40 to 60, 6 seconds.

Gasoline mileage under test conditions

At a constant speed of 50 miles per hour, the gasoline mileage was 17.6 miles per gallon. This

represents a considerable improvement over last year's model, which gave 15.8 miles per gallon.

Speedometer errors

Indicated speed, m.p.h.....	30	50
Actual speed, m.p.h.....	27	44.5*

Odometer

Error was also large (about 9 percent fast).

Braking

Considerable brake fade was experienced with this car (the 1957 model had this fault also).

Riding and handling qualities

Riding quality was good but on rough roads the springing was found somewhat stiff. Road shock transmitted to the steering wheel was very pronounced on all except very smooth roads. The stability of the car on curves was good, but there was a tendency for the rear end to "break away" on turns.

B+ (tentative)

Pontiac Super Chief. A well-built car of satisfactory riding quality and very high accelerating ability. (Too fast for a driver who wishes to drive carefully and conservatively and wants members of his family to do so.) The fading of the brakes could be a serious fault in some mountain driving.

*An unusually large error, over 10%.

Pontiac specifications

	Chieftain	Super Chief	Star Chief
Taxable horsepower	52.8	52.8	52.8
Taxable weight, pounds	3735	3770	3825
Engine			
Cylinder arrangement	V-8 valve-in-head	V-8 valve-in-head	V-8 valve-in-head
Piston displacement, cubic inches	370	370	370
Rated horsepower at stated rpm.	240 at 4500	240 at 4500	255 at 4500
Compression ratio	8.6 to 1	8.6 to 1*	8.6 to 1
Oil filter	Full flow optional	Full flow optional	Full flow optional
Gasoline required	Regular†	Regular†	Regular†
Cooling system capacity with heater, quarts	22.3	22.3	22.3
Chassis and body			
Wheelbase, inches	122	124	124
Over-all length, inches	210.5	215.5	215.5
Width, inches	77.5	77.5	77.5
Height, inches	57	57	57
Tires	8.00 x 14	8.00 x 14	8.00 x 14
Brake factor**	40	39	39
Minimum road clearance, inches	6.25	6.25	6.25
Turning diameter, feet	N.A.	N.A.	N.A.
Steering wheel turns, full left to full right	5.0	5.0	5.0
Other details			
Battery	12-volt 53-amp.-hr.	12-volt 53-amp.-hr.	12-volt 53-amp.-hr.
Gasoline tank, gallons	20	20	20
Windshield wipers	Vacuum	Vacuum	Vacuum
Curb weight of car tested, pounds	—	4190	—

* 10 to 1 compression ratio; 270 hp. at 4600 rpm. in CR's test car.

† Premium with optional compression ratios.

** Brake factor is a number indicative of the probable relative life of brake linings.
N.A.—not available.

Pontiac prices

	Chieftain 4-door sedan	Super Chief 4-door sedan	Star Chief 4-door sedan
Factory suggested list	\$2638	\$2834	\$3071
Freight delivered New Jersey	87	88.25	88.25
Dealer handling	38	36.75	36.75
Total price, delivered New Jersey	\$2763	\$2959	\$3196

Optional equipment: automatic transmission, \$232; power steering, \$108; power brakes, \$40; heater and defroster, \$97; radio, \$102; "air ride," \$189; oil filter, \$10; two-tone paint, \$27; white-wall tires, \$42; undercoating, \$48.

An expert examines fresh-water spinning reels

FROM PINE-BORDERED LAKES and rivers of America's far north to prolific Southern waters, the inland angling fraternity, which for many years depended on a rotating-spool reel and bait casting, is swinging to spinfishing, with use of a fixed-spool casting reel.

Furthermore, these fixed-spool reels, by eliminating annoying backlash troubles, are attracting more and more women to the nation's leading participant sport—fishing. One manufacturer even recognizes milady's interest by providing fixed-spool reels in a choice of pastel shades.

Despite spinfishing's rocketing popularity, thousands of anglers still cling tenaciously to the short casting rod and the rotating-spool reel. This is particularly true in the Midwest. To meet a continuing demand, the tackle industry turns out improved models of the old favorite level-winding, rotating-spool casting reel, with prices scaled down drastically from yesteryear.

Early spinning reels in America were imported from across the Atlantic. These carried the traditional exposed fixed spool. Imported spinning reels required left-hand cranking, plus pickup of bail operation and line control with the forefinger. Americans were slow to adopt this reel.

Then came new developments in reels of this type. Fixed spools were still employed, but the open spool was enclosed in a cone-shaped hood, and the line was paid out through a small aperture in the "nose" of the cone.

Americans are taking to the enclosed fixed-spool reel quickly, particularly since the new domestic product can be mounted on the lighter models of conventional bait-casting rods. Then, too, the familiar thumbing technique used in bait casting of releasing casts and halting lures in flight can be applied. There is no need of training a forefinger to do the trick. Furthermore, the new enclosed-spool reel is mounted in the conventional position atop the rod, instead of being suspended underneath.

Despite these developments, fishermen intending to forsake the rotating-spool reel for the fixed spool had better study fishing situations before making their purchases. The rotating-spool reel



Ewing Galloway

may still serve best for some types of angling.

New anglers, men, women, and teen-agers, also should study reels carefully before making a decision on what to buy, for open-face and enclosed-spool spinning reels, which have much in common, can be almost useless in some situations.

Here are the chief points to consider in making the purchase of a fixed-spool reel:

Open-face spinning reel

Advantages

1. Eliminates backlashes.
2. Greater distance than with rotating-spool reels in casting light lures with light lines.
3. Permits "slip float" fishing at predetermined depths with live or cut bait.
4. Drag prevents angler from overplaying fish and breaking line.
5. Floating casting weights permit use of tiny lures of the weight used with fly rods.

Disadvantages

1. Careless handling of line may result in casting "loops"—usually a severe snarl, similar to a backlash between rod tip and lure.
2. Casting distance may be unsatisfactory when heavy braided line (for which they were not intended) is used to cope with severe snagging conditions.
3. Light lines and lures require longer rods (6 to 7½ feet), creating problems in carrying rods in automobiles and airplanes.

Enclosed-spool spinning reel

Advantages

1. Eliminates backlashes.

2. Eliminates bail manipulation and forefinger control required on most open-face spinning reels.

3. Greater distance than with rotating-spool reels and more accurate casts can be made with light lines and lures.

4. Adjustable drag prevents line breakage in playing fish.

5. Finger tip anti-reverse controls prevent back-winding and snarled lines inside cone.

Note: Numbers 4 and 5 also apply to some open-face reels.

Disadvantages

1. Light lines required on most of these reels may hamper fishing in snag-infested or weedy areas.

2. The drag for releasing the line to heavy fish is not developed to satisfactory smoothness in many makes and models.

3. Meticulous care must be taken in placing new line on spool. The amount of line in relation to the "lips" of the spool is one deciding factor between poor performance and effective functioning.

Open-face spinning reels

All open-face spinning reels have identical performance after the line is released for the cast, irrespective of make, model, or price. Hence they are suitable both for the veteran angler of either sex and the teen-ager. Inexperienced or first-time anglers will more readily learn spinning techniques than those who have had experience with the rotating-spool reel.

Caution—Make certain the line is installed on the spool in exact conformity with instructions of line maker or reel maker. Improperly installed lines have discouraged more starters in spinfishing than any other factor. Open-face reels require a rod made specially for their use.

Factors to consider in making a selection

Carboloy or roller on bail pickup insures longer line life by preventing "grooving," and wear on the line.

Observe whether the reel is available in right- and left-hand models—or is the retrieve handle interchangeable for right- or left-hand use? Smoothness in operation returning bail (line pickup) to pickup position is important.

Check on whether the anti-reverse control is located for instant operation without interfering with playing a fish.

* * *

The following reels and others listed in this article have been rated on the basis of examination and use by a veteran fisherman and sports writer

with many years of practical experience on lake and stream. There are no official standards of performance and quality that might be used to apply laboratory tests as is CR's custom in securing data for rating household appliances, for example. The comments and judgments, however, of an experienced fisherman will be of some value, particularly to novices, in helping them purchase practical and useful equipment. Admittedly, there will be some differences of opinion among the experts as to the manipulation and handling qualities of the individual brands, since each person has his own particular tastes in such matters. In these judgments, however, an effort has been made to keep the personal element to a minimum.

A. Recommended

Alecedo Micron (Distributed by Continental Arms Corp., 697 Fifth Ave., New York 22) \$41.50. With 6½-oz. weight and fast retrieve, is recommended for expert anglers using exceptionally light tackle.

Larchmont, Model 312 (Airex Corp., 411 Fourth Ave., New York 16) \$29.95. Price includes 100 yd. 6-lb.-test braided line on spool. Pre-set drag (line brake), convenient, but of doubtful value after line becomes worn.

Mitchell, Model 300 (Model 301 is left-hand reel) (The Garcia Corp., 268 Fourth Ave., New York 10) \$32.50. Tungsten carbide line guide on pickup assures long line life. Smooth drag, click; anti-reverse control in best position of reels tried out. Bail goes into pickup position smoothly, with little resistance. Large and small capacity spools accompany reel.

Pelican, Model 1020 (Model 1020-A is left-hand reel at same price) (Enterprise Mfg. Co., Akron 9, Ohio) \$24.95. Drag, exceptionally smooth, but drag adjustment while playing fish may be excess baggage. Pickup bail snaps into position in about 1/6 turn of handle, permitting immediate set of hook.

Spinpal, Model 260 (James Heddons Sons, Dowagiac, Mich.) \$25. Automatic full-bail pickup goes into position to cast by reverse turn of handle; start of retrieve returns it to "wind in" position. All operations smooth. Anti-reverse and other functions, satisfactory. Suitable for any angler. ¶Furnished in manual pickup in Model 240 at \$19.95.

B. Intermediate

These reels will prove satisfactory to men, women, and children and vary in no way from the *A-Recommended* ones in their performance in the actual cast. Differences between these and the *A-Recommended* reels lie in the less smooth action in returning bail to pickup position, less smooth operation of rewind gears, and finish. They are less expensive and may be considered in the category of a spare reel or a reel for the novice fishing companion or youngster.

Pfleuger Freespeed (Enterprise Mfg. Co.) \$14.95. Stainless-steel bail and line roller. A rather sturdy reel

of acceptably smooth operation. Suitable for novices and teen-agers at a price approximately \$10 under higher-grade reels.

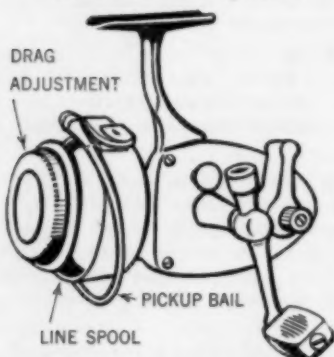
Trimline, Trim Spin Model (Trimline Tackle Co., Inc., New York 51) \$5.98. Full automatic bail pickup. Ample line capacity with 3.44 to 1 pickup ratio. Anti-reverse click, well located. Clutch or line brake not as smooth as on most reels. Well worth its price.

True Spin, Model 340 (American Tackle & Equipment Co., A and Somerset Sts., Philadelphia 34) \$17.95. Stainless-steel full bail. Anti-reverse lever not conveniently located for quick action. Has a steel rotating line roller for rewind which will save lines. Reel is a bit heavy for feminine anglers and for youngsters.

Enclosed-spool spinning reels

These are the reels that bring spinning-type fishing into the reach of thousands of fresh-water anglers who would not warm up to the open-face spinning reel. The cone and small aperture, from which the line emerges on the cast, prevents billowing and attendant "casting loops" sometimes produced with open-face spinning reels. This kind of reel can be mounted atop a lightweight bait-casting rod, and it eliminates the need for manual operations in cast and line release by finger tips. It is the reel most rapidly growing in use in inland America. These reels are provided

Open-face spinning reels

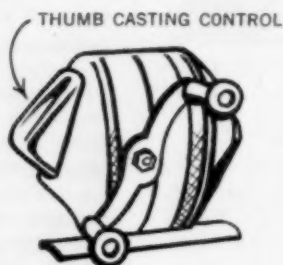


The first type of spinning reel to reach American shores. The line is coiled on the spool from which it billows unhindered when the angler casts. It is then retrieved after the pickup bail (shown here in retrieving position) again engages the line to bring the lure, and sometimes a fish, back to the angler. Unlike American-designed reels, the open-face spinner is "wound in" by the angler's left hand. This reel hangs below a rod specially designed for its use. This is the Airex Larchmont reel.

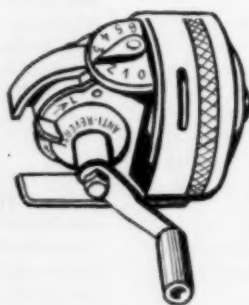


This Mitchell open-face reel shows cranking side with anti-reverse control lever in position to be flicked into place and prevent "backwinding" when a heavy fish strikes.

Enclosed-spool spinning reels

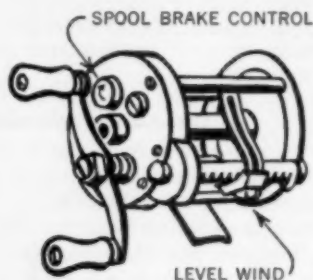


This Zebco fixed-spool, cone-enclosed spinning reel gives the angler the same control as he would use with a rotating-spool bait-casting reel, including position on the rod reel seat. Two handles on the crank facilitate pickup. This reel on the proper rod permits ease of casting and cannot backlash, and is a true spinning reel. Plate on the back permits line release for cast and lure check if required.

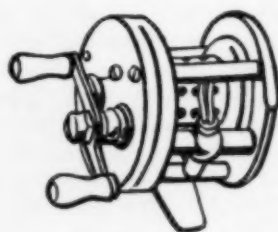


The Johnson Century reel is another type of the enclosed spinning reel suitable for bait-casting rods. It has the one-handed crank of original spinners. The brake's tension on the line is adjusted from the top.

Rotating-spool reels



This Pflueger Akron bait-casting reel exemplifies the rugged type reel used for lure casting as well as bottom fishing with bait. It is a truly American reel which with similar reels of other makes has won its way into the hearts of anglers. The spool brake, to reduce backlashes, is controlled by a knob on the crank side of the reel.



Light in weight and easy to cast is this Langley Lurecast with its narrow, perforated anti-inertia spool. The bearing cap on the crank side in this case controls the spool brake by pressure on the spool shaft. This narrow reel is intended primarily for casting artificial lures.

with the adjustable "slip-clutch" drag and in most instances with anti-reverse mechanisms, some of which can be "set" and used in constant service. All of these desirable features were considered in evaluating competitive reels.

A. Recommended

Abu-Matic 60 (Imported from Sweden; distributed by The Garcia Corp.) \$29.75. This reel is precision built with built-in anti-reverse. Star drag adjustment on one-handed crank. Drag, exceptionally smooth. Exclusive rubber line brake adds to smoothness, lowers line wear. Thumb control for releasing cast and halting lure in flight is well placed and positive in action. This reel would meet needs of veterans, newcomers of both sexes, and juveniles.

Pfleuger 88 (Enterprise Mfg. Co.) \$19.95. Extended cone should prevent line wear despite questionable claim of greater casting distance. Pickup pin for line is Carboloy. Drag works smoothly after adjusting on top of reel. Single handle crank. Has anti-reverse. Gear ratio of $2\frac{2}{3}$ to 1 would be unsatisfactory for some anglers accustomed to the 4 to 1 ratio of most rotating-spool reels.

Spincast 77 (South Bend Tackle Co., 625 High St., South Bend 23, Ind.) \$19.95. (New *Spincast 88*, \$23.95, is identical except that it uses Carboloy pickup and heavier lines.) Another excellent enclosed reel with smooth operation. Flick-of-thumb anti-reverse. Line drag tension pre-adjusted by turning cone. Drag operation, reasonably smooth. Single handle on crank as on open-face reels.

Wondercast, Model 1775 (Shakespeare Co., Kalamazoo, Mich.) \$19.95. To all intents and purposes, identical in appearance and function with *Spincast 77*.

Zebco, Model 33 (Zebco Co., Tulsa, Okla.) \$19.50. New 1958 model with feathertouch control and smooth drag is taking anglers' fancies rapidly. Only necessary to depress the thumb control fully to prepare for casting, release to cast, and depress if it is desired to stop flight of lure. Carboloy pickup insures long service and minimum line wear. Two-handed retrieve will have familiar "feel" to bait caster. Rate of retrieve, satisfactory. Operation, smooth. (This also applies to *Zebco Scottee 66*, \$12.95.) Both have thumbscrew drag tension adjustment. Ideal for veterans or teen-agers of both sexes.

B. Intermediate

Johnson Century, No. 100 (The Denison-Johnson Corp., Mankato, Minn.) \$17.95. Primarily the same as *Citation 110* except for lighter lines and with $18\frac{1}{2}$ in. per turn retrieve. Tungsten carbide pickup. Dealers and reel repairmen report line jams with this reel, blamed on manufacturer overfilling spool with line supplied with reel. Complaints of rough drag operation also tend to keep reel from top acceptance.

Johnson Citation, No. 110 (The Denison-Johnson Corp.) \$22.95. For heavier lines up to 10-lb. test. Provides for right- or left-hand retrieve. Tungsten carbide pickup. Retrieve of 24 in. with each turn of the handle at full spool. Anti-reverse. Tension adjustment atop reel.

Trim-Cast (Trimline Tackle Co., Inc.) \$9.95. Automatic anti-reverse. Tungsten carbide protection at line wear points. Experienced anglers would find use confusing due to line release control opposite to "thumb principle" on rotating-spool reels. Easy to reach brake. An acceptable reel for use with beginners or juveniles, or as a "spare."

Rotating-spool reels

The rotating-spool reels are the long-time familiar bait-casting reels with the rotating spool, noted for occasional backlashes (snarled line on spool) for the experienced angler, and numerous backlashes for the inexperienced. The adoption of a spool brake, now general, has made this less of a problem, but the braking action on the spool shortens casts. These reels, adaptable to short and heavy as well as long and slender rods, can be used for bait fishing on the bottom, but are not entirely satisfactory when fishing with a float at more than 6-foot depths. Manufacturers now produce rotating-spool reels with narrow spools which enable experienced bait casters to obtain long casts with light lines nearly on a par with cone-enclosed spinning reels. Most are without drags in conventional models, although a few "star drag" reels are produced. All models mentioned here have the level wind attachment which places the line on a level across the entire spool without yesteryear's manual "spooling" process.

A. Recommended for all fresh-water fishing

Green Hornet, No. 2200 (Bronson Reel Co., Bronson, Mich.) \$7.95.

Heddon Pal, No. P41 (James Heddon Sons) \$14.95.

Peer Monofil, No. 109F (Penn Fishing Tackle Mfg. Co., 3280 W. Hunting Park Ave., Philadelphia) \$12. Has star drag.

Peerless, No. 9F (Penn Fishing Tackle Mfg. Co.) \$13.50. Has star drag.

South Bend, No. 1000 (South Bend Tackle Co.) \$17.95. Shakespeare line of reels runs closely parallel.

Streamlite, No. 310 (The Langley Corp., 310 Euclid Ave., San Diego 14) \$15.

Supreme, No. 1573, \$37.50; **Akron, No. 1893**, \$12.95. (Both by Enterprise Mfg. Co.)

A. Recommended for casting artificial lures

Ambassadeur (The Garcia Corp.) \$45.

Lurecast, No. 330 (The Langley Corp.) \$16.50. Has narrow spool.

Pal P41N (James Heddon Sons) \$16.50. Has narrow spool.

President, No. 1970A (Shakespeare Co., Kalamazoo, Mich.) \$32.50. South Bend line of reels runs closely parallel.

Justice in accident cases— a new frontier of science

BY JONATHAN KARAS

Jonathan Karas is a Professor at the University of New Hampshire, and Director, Physical Science Section, MVR Scientific Evaluation Group, Durham, New Hampshire

DID YOU EVER HEAR of a research project carried on by scientists designed to help a court determine guilt in a manslaughter case? or to determine why a mechanic was hurt while changing a tire? or to learn which of two cars was across the center line in a head-on collision?

Today, while science is probing a new frontier in space, it is likewise providing reliable measures to advance still another vital frontier—justice.

Take a simple case. A man is being tried in a case involving a fatal accident resulting from inability successfully to negotiate a curve at night. The contention of the prosecution is obvious: high speed, of the order of 65-70 miles per hour. The defense maintains that the driver was blinded by oncoming lights, since the road was well traveled. Testimony shows that either theory has its good points and its weak ones. The problem now becomes one of verbal abilities of the lawyers, and the career and monetary savings of the defendant hang in the oft-cited balance. Cases similar to this take place every day in hundreds of courts in our land, and affect the security and property of millions of American consumers.

Here is how science can help. First, we determine the make and condition of the vehicle and

the location and condition of the accident scene. We obtain a similar vehicle and proceed to negotiate the actual curve at higher and higher speeds under road conditions similar to those of the accident. Careful controlled driving by an expert proves conclusively that one could not make the curve at speeds over 52 miles per hour; in fact, definite skidding will take place at even lower speeds.

Lest an attorney or insurance representative should frown at the brevity of the foregoing explanation, let us hasten to add that we are oversimplifying a bit. He could well ask how one could ever find a "similar car" to that destroyed in the collision, and his point is well taken. What we do is to approach the problem in a conservative way, making due allowances, based on appropriate considerations of the variables involved. This can be done by trying several cars, changing tires from new to smooth, and other variations. Even when all these variables are considered, we do not achieve an absolute end result. In this case our data might have shown severe skidding at lower speeds. It may be that 47 miles per hour is the maximum speed achieved in any test. Now, to take into account smaller variations which might exist, we report a maximum speed without skidding of 52 miles per hour based on our previous extended background research in many fields of controlled driving. Although we are working with the defense attorney, our report may favor the prosecution; yet our findings do



Figure 1—This photograph shows one section of a motion picture sequence of a reconstruction of an actual crash that involved a collision at a road intersection. Both of the cars shown were in motion at the time the picture was taken.



Figure 2—Moment of impact caused by the action of the driver on the left who neglected to stop at the intersection. Car on the left moving at 35 miles an hour, car on the right moving at 5 miles an hour.

not necessarily concur fully with the prosecution's contention.

The chances are small that you will find yourself in a court as a witness in an automobile accident—but as these chances exist, let us consider them.

Witnesses, fundamentally, are honest and want to help where possible. They are your townspeople, friends, and business associates—and—"they" could be you.

The role of a witness in court is important, and witness testimony is often accepted despite discrepancies that are sometimes glaring. But, the court maintains: the witness was there and thus is competent to offer assistance by his testimony.

Generally, independent witnesses are inclined to be too helpful. They bend over backward to help reconstruct situations, try to estimate speeds, and often have quite involved theories as to what happened. But, how reliable are their "facts" and judgments?

Our experience has shown reliability of about 50 percent. By reliability we do not imply honesty or dishonesty. Rather we refer to the ability of a witness to report accurately what he has seen. Many discrepancies in eyewitness accounts are obvious to a scientifically trained person because he knows their implications, but they are not noticed by the layman.

Perhaps this could be made clearer by a few examples. A witness has stated that a 12-wheel tractor trailer stopped in 30 feet from 35 miles per hour. Does this sound logical? It certainly does not, for the statement is sheer nonsense when one considers the scientific facts of friction! No combination of tire and road in the world could produce such quick stopping from 35 m.p.h.

Or take this example: Two witnesses offer testimony. One says that a tire exploded in front of him and he estimates it went 65 feet into the air

vertically. The other witness heard the explosion and ran from a near-by parking lot, a distance of about 400 feet, just in time to see the tire land.

These figures do not cause any particular reaction in the average person. Yet simple calculations show that if both statements are correct the second witness can run almost 70 miles per hour! Someone is way off on his estimating, yet we are asking the courts to reach a verdict using these evidently conflicting statements as though they were facts.

We can see how the overhelpful witness can greatly confuse the issue, if his opinions are not checked by a competent scientist. In practically every case where witness testimony is considered, a number of such conflicts of fact and opinion are revealed.

There is a twofold danger in this situation. First, the jury must pass upon the significance of statements which are inherently incorrect. Then, to compound the injustice to one of the parties in the suit, some of these "facts" are quoted on later days of trial and are used as a base upon which to "build" further testimony. Thus we end up with a giant inverted pyramid of numerical and physical fallacies. As the pyramid gets taller, each "stone" gets further and further from the truth.

As to estimations of vehicle speed, data in our files show that vehicle color, angle of approach, body style, exhaust noise, time of day, rain or shine, position of witness all influence the result.

Does this sound incredible? During an extended series of crash decelerations in which many factors were considered, we attempted a realistic study of speed estimation by alert men in the Armed Services. Estimates of from 7 to 50 miles per hour were duly recorded for a collision which took place at a speed that was later found to be about 10 miles per hour! We had not guessed at the correct result. The correct finding came from synchronized cameras, millisecond timers, and positioned reference "fences" used as backgrounds for the moving vehicle. You can see why witnesses' estimates of speed can and should be challenged.

No witness should fear to reply "I don't know" to directed questions if, as a matter of fact, he does not know the correct answer. Ask yourself how much you could see during a fleeting fraction of a second. How much of what you "saw" would you be willing to state as fact, where a defendant's life or property is concerned?

It is our contention that in cases where a death has occurred in an accident, the proceedings should be monitored from the standpoint of the mathematical and physical sciences by a court-appointed expert qualified by education and training to make the necessary checks and verifications of questionable or conflicting testimony. Such an expert could check witnesses' statements to catch



Figure 3—The car on the left swerves after the impact, while the car on the right spins and plunges off the road into the trees. An accident of this kind could easily result in killing or injuring a number of persons.

and point out gross violations of scientific laws and established facts. The scientist would not enter into the discussion of whether the statements were admissible as evidence, or not, for this is a legal problem and requires men trained in legal doctrines, precedents, and procedures. The monitor would be present to point out misstatements and contradictions such as those given in the preceding examples. The services of the scientifically trained person would be available to the court, the prosecution, and the defense.

From what sources do we draw these scientists? Most large cities have in their vicinities colleges or universities which can supply people who have specialized abilities, for example, in physics or mechanical engineering. Further, it would be within the jurisdiction of the court as to who is to be called on a certain case to monitor the proceedings. The scientist would be responsible to the court and not to either side. He would not be called as a witness, but would be required to pin-

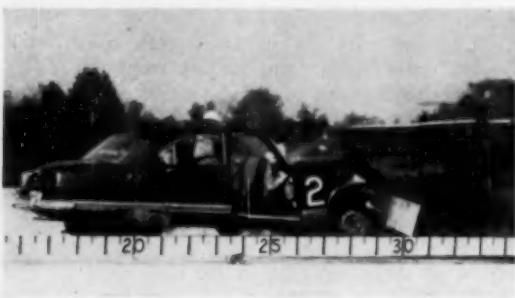


Figure 4—Crash deceleration of a car against a fixed barrier to evaluate effectiveness of a seat belt. The dummy is seen with its head in violent impact on the windshield-dash area. The test is performed by a trained driver alongside in another car until the last moment. The driver is the person with the helmet who is seen stepping into the pickup car.



Figure 5—Double roll-over of brand-new modified stock car with live driver. Driver escaped unhurt due to factors of time and distance available in this type of accident.

point in an advisory capacity gross errors in judgment of the type already discussed.

But before such a plan becomes reality, there is a Gibraltar-like obstacle that must be cleared out of the way. This obstacle is the fear of some backward courts that scientific reasoning borders on black magic, and that its modes of thought are alien to legal concepts. Time and time again we have been faced with the narrow attitude that a witness who catches a glimpse of any vehicle in the vicinity of a collision is a competent judge of speeds, positions, distances, and finally to judge who was at fault. Yet, sometimes a court is of the opinion that a man trained to work with the laws by which the entire physical universe operates is incompetent to spotlight the most glaring and cogent deficiencies in the witness' testimony! Some courts seem to feel that scientists, when called in as experts, are dedicated to a partisan view of events. It is not clear from what aspect of legal training this attitude of some courts arises.

Medical men seem to fare better. They are less plagued, less cajoled, and more respected as men of truth. Doctors in court can go into the most complex details of a brain operation, using technical terms in abundance, and usually have a reasonable chance of survival in the legal gymnastics that accompany their explanations.

Somehow, through the years, they have won the respect of the courts and as a result are now allowed to act in a dignified and professional way. They are allowed to comment on what may have caused the injury—in other words, to apply their professional reasoning to reach a causal conclusion. Yet, many times, scientists trained in physics, mathematics, and other exact sciences are prevented from expressing a valid conclusion based on the most elementary and clearly established laws of their specialty. This unconscious prejudice against the evidence of scientists must be eliminated.

In this era of advanced scientific thinking, let us make another suggestion—applied scientific research, in order that justice may be done. Where the courts do not accept theoretical conclusions, based on years of sound experience, let us go a step further and reconstruct the incident dynamically. We have done this in some cases, and the results fully warranted the time and expenditure.

Take a recent analysis. The question: Under given conditions, what is the action of a vehicle when it strikes a tree with its right front fender? The answer, from purely scientific reasoning, is obvious. The vehicle tends to pivot to its left. But since many courts frown on the physicist's or engineer's reasoning about such an incident,

(Continued on page 28)



Portable demineralizers

for taking the dissolved minerals out of tap water

IN MOST HOMES, there is need from time to time for water that is free from minerals and salts, to be used for steam irons, photographic solutions, vaporizers, sterilizers, and bottle warmers, and to bring up the liquid level in storage batteries. Distilled water is, of course, recommended for these purposes, but it is not always convenient to obtain it or to keep a supply on hand. Demineralized water, however, is a satisfactory substitute.

A demineralizer, which can be bought at most hardware and department stores, is a handy accessory in the home; with it one can convert tap water into the required amount of mineral- and salt-free water as it is needed. The cost per gallon of demineralized water will vary with the hardness of the water, increasing with rising water hardness. In moderately-hard-water areas, the cost will be in the neighborhood of 10 to 20 cents a gallon. If the tap water is very hard, it may be more economical to buy distilled water, available from drugstores or auto supply dealers.

The purifying unit can be used until the ion-exchange resins are exhausted; the end of the resins' usefulness in removing minerals is usually indicated by a gradual change in the color of the resins from blue or purple to brown or yellow. Refills are available to replace the exhausted cartridges.

Unlike the water-softening equipment in common use in homes for softening water, which removes calcium and magnesium and substitutes sodium, demineralizers remove all the minerals and their salts without substituting other chemical

substances for these. From a chemical standpoint, the demineralized water is approximately equal in quality to distilled water.

It is important to remember that while naturally soft water (e.g., rain or snow water), distilled, and demineralized waters are suitable for use in storage batteries, steam irons, etc., water which has been softened by home water-softening equipment is *not*; the dissolved solids, chiefly sodium salts, that are left in softened water by the zeolite process will form a crust or deposit in a steam iron which may, in time, require an expensive servicing job, or render the iron unusable. The addition of softened water containing sodium salts and such minerals as copper, iron, or other heavy metals which are not removed by the softening equipment to a storage battery can cause premature failure of the battery. Sources of soft water that is free from sodium salts, and is suitable for use in place of distilled or demineralized water, are rain water from a well-washed roof, clean melted snow, and melted frost from the refrigerator evaporator unit.

It is interesting to find that, while most demineralizers use the same type of resinous material for removing the minerals and salts, the efficiencies of the devices vary over a wide range. The difference lies in their design. If all the water flowing through the resins does not make adequate contact with the resins, the water delivered for use may be treated only in part or perhaps not at all, and the minerals and salts may be only partially removed or not removed at all.



Three different types of demineralizers sold for home use. At the left, Deeminac. Water is squeezed from the plastic bottle through a cartridge containing resins.

Center, Chmi-Filter. The resins and water are in the plastic bottle—water flows through the resins as the bottle is inverted and squeezed.

At the right, Wantz Kleensteam. Water poured into the upper container passes through the cartridge which is seen inside the jar; the jar is squeezed by the user.

The ratings which follow are based mainly on the quality of water obtained from each make when used under normal conditions with hard water and in part on their convenience.

A. Recommended

Chmi-Filter, Model A-8 (The Kutlir Labs., Mon-

mouth Junction, N.J.) Complete unit, \$1.69; refill cartridge, 85c. Was convenient to use and produced water of good quality.

Deeminac, Model 16-4 (Crystal Research Labs., Inc., 29 Allyn St., Hartford 4, Conn.) Complete unit, \$3; refill cartridge, Model F-4, \$2.25. Was convenient to use and produced water of satisfactory quality. The Deeminac was particularly handy for directing flow of purified water, into a small opening, for example, of a steam iron.

B. Intermediate

Cul Dew Water Refiner (Culligan, Inc., Northbrook, Ill.) Complete unit, \$2.29. Quality of water, variable, depending on speed at which water flowed from bottle.

Deeminac, Models 6-2 and 6-2A (Crystal Research Labs., Inc.) Complete unit, 6-2, \$1.75 with one refill; complete unit, 6-2A, \$3 with two refills; refill cartridge, F-2, \$1.25. Quality of water, variable, depending on speed at which water was removed from bottle. (Model F-2 cartridge is about half the size of Model F-4 cartridge, which apparently permits the water to pass through without being completely treated, unless the water is squeezed through the cartridge slowly.)

Quickpure, Cat. No. 30 (Comroe Labs., Inc., 5208 South Lake Park Ave., Chicago 15) Complete unit, \$1.59; refill cartridge package (2), \$1. Quality of water, variable, depending on speed at which water was removed from bottle.

Wantz Kleensteam conditioner, No. FS-100 (Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.) Complete unit, 98c; refill cartridge package (2), 98c. Produces water of good quality, but operation was extremely slow after resins became wet; a half hour or longer was required to make a pint of demineralized water, although manufacturer's literature claimed a pint could be made in 4 to 5 minutes.

Justice in accident cases

(Continued from page 26)

we produce an actual vehicle impact against a fixed object under the conditions mentioned. The result? The vehicle pivots to the left.

This is an elementary example; more complicated problems definitely require research to determine vehicle action and the cause of collisions and of the motions of the vehicle or vehicles.

Science is a powerful ally in automobile and truck accidents and other occurrences involving massive moving objects. We strongly urge the legal and insurance professions to make greater use of the training of experts in the physical sciences, and to bear in mind there are available extensive files of material on many aspects of automobile design and workmanship, including brake

systems, deformation of automobile body structures, manufacturing defects, tire construction and the nature of tire failures. There are also available motion picture sequences of collisions with fixed barriers, with trees, the action of a car under braking at a high speed, cars skidding and rolling over, and a host of other dynamic actions that occur on the road.

There is no doubt that science can be of inestimable value in the cause of justice and can provide facts upon the basis of which fallacies in witnesses' testimony can be made abundantly clear. Farsighted members of the professions associated with law and insurance will surely want to adopt the physical and engineering sciences as aids to justice.

The only safe and effective way to reduce excess poundage

(Continued from page 2)



dangerous to health. It may cause high blood pressure and have an adverse effect on the heart.

While some exercise or physical activity is considered helpful in eliminating excess fat, reduction of food intake is the really effective means; indeed, strenuous exercise will increase the appetite and become self-defeating as a reducing aid. Boredom is often a stimulus to snacking or nibbling. On the other hand, those with many social engagements also have a problem in maintaining reduced food intake. Both soft drinks and alcoholic beverages are caloric obstacles to reducing, and the hors d'oeuvres, nuts, pretzels, and potato chips all contribute to an excess of food in the diet. One expert advises making one drink last for an entire party and avoiding any accompanying tidbits.

The widespread emphasis on the desirability of a trim appearance, achieved by securing and maintaining the correct bodily weight, has stimulated the appearance and promotion of a host of products and devices, many of which hold forth the promise that little or no effort, will power, or exertion is needed, when they are used or taken, to eliminate the unwanted pounds. Fortunately, most of the pills, powders, potions, and impressively-advertised devices for "slenderizing" are harmless—but they are expensive and of doubtful value. The cathartics and purgative preparations that are designed to accomplish weight reduction by rushing the food through the digestive tract before

it can be properly absorbed are not so common as they once were. As the American Medical Association has pointed out for many years, such products served no safe or useful purpose in a reducing regime and were capable of causing damage to the intestinal tract. Thyroid medication, which can achieve weight reduction only when administered in toxic doses, was finally driven from the market for reducing preparations by a federal court decision in 1943, when a ruling in favor of the F. & D. Admin. held that the nostrum in question was dangerous to health.

The amphetamine group of drugs, such as Benzedrine, Dexedrine, and Desoxyn (available on prescription only), are effective in proper doses in dulling the appetite when taken before a meal. They achieve their effect by action on the appetite-regulating center in the brain and occasionally produce unpleasant side-effects such as throat dryness, nervousness, and insomnia. They help the would-be dieter to practice restraint in eating and are effective to some extent in making it easier to cut down on food intake. Since the proper dose will vary according to the individual's tolerance and the amount of weight that may be safely taken off, it is obviously desirable that such drugs be taken *only* under the supervision of a physician.

Many of the current reducing preparations are candy pills and food tablets, sometimes supplemented with vitamins and minerals. They may often be advertised as capable of reducing the appetite, "burning off" fat, or serving as a substitute for regular meals. None is effective, however, unless a restricted diet—usually suggested as a part of the "plan"—is implicitly followed. Indeed, one physician has likened them to a placebo which he defines as "a make-believe medicine given to please or gratify the patient."

Still another type of reducing preparation is based on the use of methylcellulose, or similar substances, that form a bulky gel when mixed with water. Taken before a meal, this cellulose is supposed to form a mass in the stomach to create a feeling of fullness and satiety that will encourage the reduction of food intake. The promoters of this type of reducing aid conveniently overlook the fact that the bulk apparently accumulates in the large bowel instead of the stomach and thus fails to produce the intended effect. Furthermore, as one physician has pointed out, overuse of methylcellulose might cause trouble, particularly

if the would-be reducer had a tendency to intestinal obstruction.

Among the various drugs currently used in weight reducing preparations is ammonium chloride. The announced purpose is to take the water out of the tissues, and the advertising for products containing it sometimes refers to "melting fat away." The selling appeal is based on the claim that body fat is composed of about 70 percent water; since ammonium chloride acts as a diuretic and increases the flow of water from the kidneys, there may be some reduction of weight while the drug is taken. On the other hand, if the user increases his intake of fluids during this period, there will be little or no noticeable effect on his weight. Physicians have advised that the unsupervised use of ammonium chloride medication would be dangerous to those who are sensitive to the drug or to those who are suffering from certain ailments.

Another type of drug is phenylpropanolamine. This drug is somewhat related to Benzedrine and ephedrine prescribed by physicians for depressing the appetite. New and Non-official Remedies, a publication of the Council on Pharmacy and Chemistry of the American Medical Association, recognizes the use of this drug as an adjunct for controlling the appetite in the dietary management of obesity. It recommends a dose of 50 milligrams to be taken two or three times a day before meals or a total of 100 to 150 milligrams daily, on a physician's prescription. The object, of course, is to encourage the patient to reduce his food intake, the essential requirement for weight reduction. There have been a number of clinical studies published in reputable journals that were carried out to establish the effect and determine the disadvantages of the use of this drug in a program of weight control. The promoters of many nostrums have capitalized on these experiments by implying in advertising and sales literature that similar results may be obtained from the use of their products. It should also be noted that prices charged for such preparations made from commonly available chemicals and drugs are inflated many times above their cost.

The National Better Business Bureau has done a great deal of work investigating the advertising of so-called obesity remedies or weight reducing products and has found it "an area fraught with deception and outright fraud" that is "a particularly fertile one for unscrupulous advertisers, in view of the millions of overweight people, and published medical data concerning the higher incidence of heart disease, high blood pressure, diabetes, and so forth, among the overweight." According to testimony by Miss Maye Russ,

Director of the Food, Drug, and Cosmetic Division of the National Better Business Bureau, before a Congressional hearing on false and misleading advertising, none of the so-called no-diet wonder drugs available for over-the-counter sale will in themselves cause a reduction in weight. Specific reducing preparations investigated by the National Better Business Bureau that were discussed by Miss Russ included:

E.E.D.R. of which the essential ingredients were ephedrine hydrochloride, ethylenediamine dihydrochloride, and ammonium chloride claimed to flush "fat right out of your body." Purchasers were also advised in the accompanying literature that they must take in fewer calories than their bodies needed to live on. It was the consensus of the medical authorities consulted by the National BBB that the product would not "melt fat" or "flush it out" of the body.

E.H.P. (Eat-Half-Plan) was advertised as "the first wonder drug for reducing." The NBBB reported that the product contained only 10 milligrams of phenylpropanolamine hydrochloride (with caffeine, and vitamins C, B₁, and B₁₂), an amount of the drug inadequate for useful effect on the appetite. The product was withdrawn from the market for a time, but later appeared under the name "No-Di-Et," in which the amount of phenylpropanolamine hydrochloride had been increased to 15 milligrams per tablet—still considerably lower than the 50 milligram dose considered effective by the American Medical Association (for use under medical supervision). The Post Office Department on February 13, 1957, issued a fraud complaint against the North American Stevens Corp. that promoted this product, and its owner signed an affidavit of discontinuance on May 24, 1957.

ND-17, another product in which the essential ingredient was phenylpropanolamine hydrochloride, 25 milligrams per tablet, was called the "First no-diet reducing wonder drug. . . . Lose as many pounds as you like without diets of any kind." The Post Office Department issued a fraud complaint against the promoters of this product on May 15, 1957, and an affidavit providing for discontinuance of the misleading claims was submitted by the advertiser.

Regimen has been advertised as an "Amazing new medical release. . . . No-Diet Reducing with New Wonder Drug for Fat People. . . ." The product examined by the National Better Business Bureau consisted of three separate tablets identified by color as follows: green—benzocaine and various vitamins; pink—ammonium chloride; yellow—phenylpropanolamine hydrochloride (25 milligrams), caffeine, and minerals. In investi-

gating the effect of these various drugs, the National Better Business Bureau was advised by the Food and Drug Administration that the benzocaine would not be completely successful in appeasing the appetite sensation. The medical authorities consulted on the effect of ammonium chloride stated that while a dose of 4 grams might cause a very temporary loss in body weight due to transient reduction in extracellular fluid (not fat tissue), once the drug was discontinued the fluid would rapidly reappear. Furthermore, the Food and Drug Administration advised that the water content of normal fat tissue is of the order of 15 to 20 percent, not 70 percent of fat tissue as claimed. The phenylpropanolamine hydrochloride in the amount provided was considered inadequate to exert an appetite-depressant effect of any practical significance. The Post Office Department took action against the claims for this product, and its promoters entered an affidavit of discontinuance with the Department on June 24, 1957. *Regimen* tablets, however, continued to be sold over the counter and advertised on television.

In its investigation of alleged weight reducing products, the National Better Business Bureau reviewed a considerable number of published articles and obtained opinions from competent physicians and medical groups on the effect of

phenylpropanolamine hydrochloride. It also requested the individual advertisers to submit substantiation of their claims in the form of competent clinical evidence that the drug in the dosage contained in their products would depress the appetite of obese users to the extent that they would assuredly lose weight. The Bureau's representative reported that they had yet to see any acceptable evidence that the drug in the dosage permitted for over-the-counter sale would produce the results claimed in the advertising, and pointed out that even in medically prescribed dosages the drug is to be used *as an adjunct to the reduction of food intake*.

The concept that exercise can be useful in limited fashion to stimulate the metabolism and help burn off fat has been seized upon by shrewd merchandisers of many devices designed to persuade the dieter that he can avoid the amount of inconvenience and effort involved in active exercise such as playing tennis or golf, hiking, swimming, or bicycling. In the past 10 years, a host of fancy rolling pins, rubber balls mounted in various designs, vibrators, rollers, and techniques for applying heat have been sold to the hopeful as easy methods of reducing. Various agencies of the federal government, the Better Business Bureau, and the Bureau of Investigation of the

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American Medical Association have pointed out time and again that no clinical evidence has been offered to support the claim that any of these devices would roll off fat or prove to be an effective treatment for reducing the user's weight either on an over-all basis or in particular spots.

A comment from the British Medical Journal in answer to a letter of inquiry probably best sums up the whole question in short space: "Fat being semi-fluid at body temperature, can be 'shifted about' to some extent by a skilled masseuse or with a vibrator. But massage, while being possibly able slightly to alter contours, will not reduce weight. There is no easy short cut to loss of weight or girth in massage."

In other words, with the rollers and vibrators you don't take it off, at best you just move it from here to there. Exercise will, of course, improve posture; increase effective utilization of food; tone muscles and improve the general bodily carriage so that there will be a general improvement in the would-be reducer's appearance if a proper schedule of exercise suited to the person's health and vigor is carefully followed.

One of the most widely advertised non-medical devices is based on the principle of applying electrical shocks to motor nerves of the larger voluntary muscles. As one of the physicians on the staff of the Council on Physical Medicine and Rehabilitation of the American Medical Association pointed out, the resulting muscular contractions function to move the blood onward, and in bedridden, paralyzed patients such muscle-setting exercises are of value in preventing thrombosis (a clotting of the blood in some part of the circulatory system). In a normal person capable of

moving about and exercising freely, such muscle stimulation is not likely to achieve any appreciable reduction in weight unless a restricted diet is also adhered to faithfully.

There are so many products claiming in extravagant language their ability to aid the American consumer in removing excess poundage that Congress considered it important to hold hearings on the subject last summer. The dangers set forth in the testimony, however, are chiefly those to the pocketbook. As a matter of fact, the hearings brought out the fact that in the absence of evidence of demonstrated injury to public health, it was proving very difficult for government agencies to secure legal action in restraining the clever but misleading advertising of those who appeal to people who want a simple, easy, comfortable technique for reducing without exertion, exercise of will power, or deprivation. So much information, however, has been disseminated by newspapers and magazines, by physicians, health experts, and even by a Congressional hearing, all making the point that the only effective way to reduce is to cut down on the amount of food eaten, that consumers who indulge in wishful thinking have only themselves to blame if they waste money on some "easy method." They will do well to keep in mind the masterly understatement of Dr. Morton J. Rodman, professor of Pharmacy at Rutgers University, on television medical advertising: "The commercial just is not factual."

Reduction in weight can be accomplished safely and effectively only by reduction of calories in the daily diet, which means reduction in the amount of high-calory foods consumed, chiefly foods high in sugar, starches, oils, and fat.

Consumer Bulletin

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Ratings of Motion Pictures

THIS SECTION aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Boxoffice, Cue, Daily News (N. Y.), The Exhibitor, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, The New Yorker, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, The Tablet, Time, Variety (weekly).

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Anasco, Eastman, Technicolor, Trucolor, Warner Color, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fun—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C	
—	5		Abductors, The.....dr AYC
—	6	3	Abominable Snowman, The (British).....sci-mel AYC
—	9	7	Across the Bridge (British).....dr A
—	7	8	Action of the Tiger (British).....war-mel-c A
1	10	5	Admirable Crichton, The (British).....dr-c AY
—	4	3	Adulteress, The (French).....dr A
—	2	6	Affair in Havana.....cri-mel A
—	2	3	Affair in Reno.....mel-c A
—	6	6	All at Sea (British).....com AYC
1	7	1	All Mine to Give.....dr-c AYC
—	5	4	Alligator Named Daisy, An (British).....mus-com-c AYC
—	5	3	Amazing Colossal Man, The.....sci AYC
—	3	5	And God Created Woman (French).....dr-c A
2	10	3	April Love.....mus-dr-c AYC
—	3	3	As Long As They're Happy (British).....com-c A
—	1	2	Assault (Finnish).....soc-dr A
—	4	11	Baby Face Nelson.....cri-dr A
—	2	7	Back from the Dead.....mys-mel A
—	1	5	Badge of Marshall Brennan.....wes AYC
—	3	2	Beast of Budapest.....mel AYC
—	1	8	Beautiful but Dangerous (Italian).....mus-dr-c A
—	1	5	Bed of Grass (Greek).....dr A
—	3	1	Beggar Student, The (German).....mus-com-c AY
—	3	—	Big Beat, The.....mus-com AY
—	3	2	Bitter Victory (British).....war-mel AY
—	3	5	Black Patch, The.....wes A
—	3	7	Black Scorpion, The.....sci-mel AY
—	3	3	Blood of Dracula.....cri-mel AY
—	1	3	Body is a Shell, The.....dr A
—	10	5	Bombers B-52.....war-dr-c AY
—	6	8	Bonjour Tristesse.....dr-c A
—	3	—	Brain from Planet Arous, The.....sci AY
—	1	2	Bride and the Beast.....mel AY
—	4	5	Bride is Much Too Beautiful, The (French).....com A
—	12	4	1 Bridge on the River Kwai, The.....war-dr-c AYC
—	6	3	Brothers in Law (British).....com A
—	4	3	1 Brothers Karamazov, The.....dr-c A
—	4	2	Cabaret (German).....mus-dr A
—	7	5	Cabiria (Italian).....dr A

A	B	C	
—	10	4	Careless Years, The.....soc-dr A
—	1	2	Carnival Rock.....mus-mel AY
—	1	3	Cartouche.....adv A
—	8	1	Cast a Dark Shadow (British).....cri-mel-c A
—	1	5	Cat Girl (British).....cri-mel A
—	3	1	Cattle Empire.....wes-c AY
—	4	—	Chase a Crooked Shadow.....mys-mel AY
—	4	7	Chicago Confidential.....mel A
1	6	3	Colditz Story, The (British).....mel AYC
—	—	4	Copper Sky.....wes AY
—	4	2	Cowboy.....biog-c AY
—	6	1	Crash Landing.....dr AYC
—	2	2	Crooked Circle, The.....mel AYC
—	2	6	Cyclops.....sci-mel A
—	4	4	Dalton Girls, The.....wes A
—	3	2	Damn Citizen!.....mel A
1	4	7	Darby's Rangers.....war-mel A
—	5	4	Day of the Bad Man.....wes-c AY
—	5	2	Deadlier Than the Male (French).....dr A
—	5	3	Death in Small Doses.....mys-mel A
—	5	4	Decision at Sundown.....wes-c AY
—	5	6	Deep Six, The.....war-dr-c AYC
—	7	1	Deerslayer, The.....dr-c AYC
—	5	5	Devil's Hairpin, The.....mel-c A
—	2	3	Diamond Safari.....mel A
—	3	5	Disembodied, The.....mel A
—	3	6	Domino Kid, The.....wes A
1	12	4	Don't Go Near the Water.....war-com-c A
—	3	8	18 and Anxious.....dr A
5	12	1	Enemy Below, The.....war-mel-c AYC
—	5	4	Enemy from Space (British).....sci AYC
4	8	1	Escapade in Japan.....dr-c AY
—	3	3	Escape from Red Rock.....wes AYC
—	1	8	Escape from San Quentin.....mys-mel A
—	1	3	Every Second Counts (French).....dr A
5	4	7	Farewell to Arms, A.....war-dr-c A
—	3	1	Fedra, the Devil's Daughter (Spanish).....dr A
—	3	6	Female Animal, The.....dr A
—	6	1	Flesh is Weak, The (British).....soc-dr A
—	6	1	Flood Tide.....dr AY
—	4	1	Fort Bowie.....wes AY
—	4	2	Fort Dobbs.....wes AY
—	6	3	Forty Guns.....wes A
—	9	2	Four Bugs Full (French).....war-dr A
—	4	3	From Hell It Came.....sci-mel A
—	6	2	Gates of Paris (French).....dr A
—	5	1	Gentle Touch, The (British).....dr-c AYC

A	B	C				A	B	C			
1	10	3	Gervaise (French).....	dr A		—	2	4	Persuader, The.....	wes AYC	
—	5	4	Ghost Diver.....	mys-mel AYC		5	9	3	Peyton Place.....	dr-c A	
—	4	2	Gift of Love, The.....	dr AYC		—	2	5	Please! Mr. Balzac (French).....	com A	
—	6	4	Girl in Black, A (Greek).....	dr A		—	9	—	Plunder Road.....	cri-mel AY	
—	5	7	Girl in Black Stockings, The.....	mys-mel A		—	8	4	Portland Exposé.....	cri-mel A	
—	1	2	Girl in the Woods.....	cri-mel A		—	3	7	Quantez.....	wes-c A	
—	8	1	Girl Most Likely, The.....	mus-com-c AYC		—	7	6	Quiet American, The.....	war-dr AY	
—	3	3	Going Steady.....	com A		—	8	6	Raintree County.....	war-dr-c A	
—	7	—	Golden Age of Comedy.....	doc AYC		—	1	3	Rape on the Moor (German).....	dr A	
—	4	10	Golden Virgin, The (British).....	mel A		—	5	5	Razzia (French).....	cri-mel A	
—	1	7	Green Eyed Blonde, The.....	soc-dr A		—	3	3	Reform School Girl.....	soc-mel A	
—	2	5	Gun Battle at Monterey.....	wes A		—	2	7	Return to Warbow.....	mel-c AYC	
—	1	5	Gun Fever.....	wes A		—	2	6	Ride a Violent Mile.....	wes A	
—	—	4	Gunfire at Indian Gap.....	wes AY		—	1	8	Ride Out for Revenge.....	wes A	
—	1	2	Guns Don't Argue.....	cri-mel A		—	5	2	Rock Around the World (British).....	mus-biog AY	
—	4	6	Gunsight Ridge.....	wes AYC		—	8	2	Rockabilly Baby.....	dr AYC	
—	4	4	Hard Man, The.....	wes-c A		—	3	5	Roots, The (Mexican).....	doc A	
—	3	8	Hear Me Good.....	com A		—	2	10	4	Sad Sack, The.....	war-com AYC
—	6	9	Helen Morgan Story, The.....	mus-biog-c A		—	6	3	Safecracker, The (British).....	war-mel AY	
—	1	8	Hell Bound.....	mel A		—	3	5	1	Satchmo the Great.....	mus-doc AY
—	6	—	Hell Canyon Outlaws.....	wes AYC		—	6	8	3	Sayonara.....	dr-c A
—	1	4	Hell on Devil's Island.....	soc-mel A		—	1	8	6	Search for Paradise.....	trav-c AYC
—	1	3	Hell Ship Mutiny.....	mel AYC		—	1	8	3	Seven Hills of Rome, The.....	mus-dr-c AY
—	5	2	Hired Gun, The.....	wes AY		—	2	5	Ship Was Loaded, The (British).....	war-com AY	
1	8	6	How to Murder a Rich Uncle (British).....	com AYC		—	1	4	5	Short Cut to Hell.....	mel A
—	1	5	11	Hunchback of Notre Dame, The.....	dr-c A	—	6	2	Silken Affair, The (British).....	com A	
—	2	5	1	I Was a Teenage Frankenstein.....	mel AY	—	6	2	Sing, Boy, Sing.....	mus-dr AYC	
—	3	4	1	I Was a Teenage Werewolf.....	cri-mel A	—	3	3	Sins of Casanova (Italian).....	com-c A	
—	9	2	1	Invisible Boy, The.....	sci AYC	—	2	10	3	Slaughter on Tenth Avenue.....	cri-mel A
—	8	1	1	It Happened in the Park (French-Italian).....	dr A	—	8	—	Slim Carter.....	com-c AYC	
—	5	3	1	It's Great to be Young (British).....	mus-mel-c AYC	—	4	3	Smallest Show on Earth, The (British).....	com A	
—	7	10	1	Jailhouse Rock.....	mus-mel A	—	7	3	Smiles of a Summer Night (Swedish).....	com A	
—	1	8	1	Jamboree.....	mus-com AYC	—	2	4	Sorority Girl.....	mel A	
—	3	8	1	James Dean Story, The.....	biog AY	—	7	3	Spanish Affair, The.....	dr-c AYC	
—	6	4	1	Jet Pilot.....	war-mel-c A	—	6	8	Stopover Tokyo.....	mys-mel-c AYC	
—	6	4	1	Johnny Trouble.....	com A	—	1	13	Story of Mankind, The.....	hist-dr-c AYC	
—	7	9	1	Joker is Wild, The.....	mus-biog A	—	6	5	Story of Vickie, The (Austrian).....	biog-c AY	
—	4	2	1	Julietta (French).....	com A	—	7	4	Stowaway Girl (British).....	mel A	
—	2	6	1	Jungle Heat.....	mel A	—	5	6	Street of Sinners.....	cri-mel A	
—	—	3	1	King in New York, A (British).....	com A	—	4	—	Summer Love.....	mus-com AY	
—	12	7	1	Kiss Them for Me.....	com-c A	—	9	7	Sun Also Rises, The.....	dr-c A	
—	2	8	1	Lady of Vengeance (British).....	cri-mel A	—	—	3	Sword for Hire (Japanese).....	dr A	
—	6	4	1	Lady Takes a Flyer, The.....	com-c A	—	7	1	Tall Stranger, The.....	wes-c AYC	
—	4	3	1	Lafayette Escadrille.....	mel A	—	1	3	Taming Sutton's Girl.....	mel A	
—	3	—	1	Last Bridge, The (Austrian).....	war-dr A	—	6	11	Tarnished Angels, The.....	dr A	
—	3	—	1	Last Stagecoach West.....	wes AYC	—	1	4	Teenage Doll.....	cri-mel A	
—	1	2	1	Lawless Eighties, The.....	wes AYC	—	—	3	Teenage Monster.....	sci AY	
—	1	5	1	Legend of the Lost.....	adv-c AY	—	1	2	Teenage Thunder.....	dr AYC	
—	5	9	1	Les Girls.....	mus-com-c A	—	4	5	Tijuana Story, The.....	mel A	
—	—	4	1	Long Haul, The (British).....	mys-mel A	—	2	9	3	Time Limit.....	war-dr A
—	—	3	1	Looking for Danger.....	com AYC	—	5	2	Time without Pity (British).....	dr A	
—	1	3	1	Lost Lagoon (British).....	mel A	—	3	10	1	Tin Star, The.....	wes AYC
—	9	—	1	Love Slaves of the Amazons.....	adv-c A	—	—	5	3	Under Fire.....	war-mel AY
—	2	5	1	Man Escaped, A (French).....	war-dr A	—	—	5	Undersea Girl.....	cri-mel A	
—	6	9	1	Man in the Shadow.....	mel A	—	5	5	Unholy Wife, The.....	dr-c A	
—	6	4	1	Man on the Prowl.....	cri-dr A	—	—	7	Unknown Terror.....	mys-mel A	
—	6	2	1	Missouri Traveler, The.....	com-c AY	—	8	9	Until They Sail.....	war-dr A	
—	2	12	1	Mister Rock and Roll.....	mus-com A	—	1	2	Up in Smoke.....	com AYC	
—	8	1	1	Monolith Monsters, The.....	sci-mel AYC	—	1	8	Violators, The.....	soc-dr A	
—	2	2	1	Motorcycle Gang.....	mel A	—	3	3	Virtuous Scoundrel, The (French).....	com A	
—	1	3	1	Mustang.....	wes AY	—	3	1	Walk into Hell.....	mel-c A	
—	1	5	1	My Man Godfrey.....	com-c A	—	1	5	Wayward Girl, The.....	soc-mel A	
—	1	4	1	Naked in the Sun.....	mel-c A	—	4	—	White Horse Inn, The (German).....	mus-com-c AYC	
—	7	8	1	No Down Payment.....	dr A	—	2	8	6	Wild is the Wind.....	dr A
—	7	4	1	Novel Affair, A (British).....	com-c A	—	7	8	—	Witness for the Prosecution.....	mys-mel A
—	5	12	1	Old Yeller.....	dr-c AYC	—	7	6	Woman in a Dressing Gown (British).....	dr A	
—	2	13	1	Operation Madball.....	war-com AYC	—	2	8	8	Woman of the River (Italian).....	dr-c A
—	3	1	1	Ordet (Danish).....	dr A	—	6	4	World Was His Jury, The.....	mel AYC	
—	2	3	1	Oregon Passage.....	wes-c AY	—	8	2	Young and Dangerous.....	dr A	
—	3	10	4	Pal Joey.....	mus-com-c A	—	1	13	3	Zero Hour.....	dr AYC
—	—	7	1	Panama Sal.....	com A						
—	4	2	1	Panic in the Parlor (British).....	com AY						
—	1	5	1	Parson and the Outlaw, The.....	wes-c A						
—	1	5	1	Paths of Glory.....	war-dr AY						
—	3	11	3	Perri.....	doc-c AYC						

The Consumers' Observation Post

(Continued from page 4)

CHICKENS AND TURKEYS ready to cook, frozen meat pies, pre-cooked potatoes, fish, and other foods and frozen complete meals are said to provide "built-in" maid service. The cost of this service is estimated as \$6 billion a year, according to the Agricultural Extension Service of the Virginia Polytechnic Institute.

* * *

MISLEADING ADVERTISING OF AUTOMOBILE TIRES has been the subject of concern to the better elements of industry and the National Better Business Bureau for some time. At their instigation, the Federal Trade Commission has advocated an 11-point program for truthful tire advertising, including the suggestion that, since there are no official standards for tires, the original equipment tires on new automobiles be taken as a point of reference. Any tire, to qualify as first line, should be equal to original equipment tires, and the term "premium line" should be used to describe only tires of better quality than "first line." The term "original equipment" should be given only to tires currently used on new models and should not be applied to tires formerly used as original equipment without disclosing the year in which they were used. If the term "100 level" or "120 level" is used, advertising should clearly disclose what such terms mean as applied to the particular product offered. Copies of the proposed tire advertising guide are available without charge from the Federal Trade Commission, Washington 25, D.C.

* * *

SHOE FITTING FLUOROSCOPES are being subject to increasingly strict regulation in the United States. The improper use of such a device may cause serious consequences not only to the customer being fitted but to the sales clerk as well. The British Medical Journal late last year carried a report of radiation damage to a sales clerk in Copenhagen, Denmark, who had used the device in fitting shoes for 10 years. It was her custom, if children were afraid, to put her right foot in the apparatus to show that it did not hurt. In time she developed serious dermatitis on this foot, with ulceration under the nail of the second toe that had failed to heal under various local treatments.

* * *

AMERICAN COFFEE DRINKING HABITS are changing. The demand for instant coffee has been responsible for an increase in imports of the low-priced African bean which heretofore has not suited the American taste in roasted blends. According to the New York Times, most of the African coffees are classified as Robustas and are priced below beans from Brazil, Columbia, and other Latin American coffee growing countries—although there are some high-priced African coffees. The process of making instant or soluble coffee calls for more economical use of the coffee bean and results in more cups of coffee from a given amount of green beans than for the regular ground coffee. With the current efforts of coffee processors to put a coffee aroma into instant coffee, still further competition will be given the sale of the regular coffee.

* * *

HOW TO MAINTAIN THE FRESH QUALITY OF FRUITS AND VEGETABLES is an important field of research in agricultural circles. Unfortunately, much of it appears to be directed toward what is called maintaining "shelf life." The U. S. Department of Agriculture in January issued a report of recent studies in using antibiotics as a post-harvest dip for fresh fruits and vegetables to extend the shelf life of cole slaw and salad mixes, and to control decay in fresh peaches. The researchers' conclusions suggest that antibiotics might best be used for fruits and vegetables that require cooking, like potatoes and snap beans, but that application on more perishable items would probably be as a supplement to refrigeration. No doubt these researches are very useful to the growers and marketers, but it is extremely doubtful whether it is to the consumer's interest to consume foods that have been treated in this fashion.

FABRICS LABELED WRINKLE-RESISTANT AND DRIP-DRY are not exclusively resin-treated cottons. Popular fabrics made of Dacron polyester fiber in the amount of 65 percent blended with cotton may also be properly labeled "drip-dry." They have no chlorine-retentive finish. If chlorine bleach is used in washing such fabrics, there is no danger that the chlorine will build up and cause browning and tendering in contact with an iron as is sometimes the case with resin-treated cottons. The iron should, of course, be used at the rayon or synthetics setting.

* * *

FISH CAUGHT AT SEA at some distance from the market are being preserved by the addition of the antibiotic chlortetracycline (aureomycin) in the amount of five parts per million to the ice in which the fish is packed, according to a new method of preservation permitted in Canada. The process is designed to improve the appearance, taste, and smell of the fish and adds 7 to 10 days' store life to it. The British medical journal, The Lancet, reports that although stewing for 30 minutes destroys the antibiotic in the fish packed in chlortetracycline ice, frying leaves minute traces. The Lancet notes that there is little information about effects on man of small and intermediate doses of antibiotics and reports that some other antibiotic which will be effective as a preservative but more easily destroyed is being sought before the technique is adopted in Great Britain.

* * *

HOW DO YOU FIND OUT THE PRICE of the particular make and model of the car you are contemplating purchasing? It is easy with the little foreign cars, for it is always possible in the automobile advertising pages of the Sunday paper to get the port of entry prices in New York City as a basis for calculating what the price will be. Transportation inland, of course, adds to the P.O.E. prices charged in any particular locality. But American cars are another matter. According to one advertising journal, prospective buyers are faced with the techniques of a Middle East bazaar in trying to find out what is standard equipment, what is included in the price of the car, and what items are available at extra cost. One observing consumer suggests that, instead of asking the automobile dealer what the price is, make him an offer. If haggling is the order of the day, anyone who has bargained in a native market knows that you start by offering a ridiculously low figure and work upward. If the one-price system is to be discarded, bargaining is a technique that two can work at.

* * *

ARTIFICIALLY SWEETENED JAM AND JELLY must be labeled "imitation," according to a ruling by the Food and Drug Administration. The Federal standard for jam and jellies calls for sugar as one of the basic ingredients. If saccharin or some other sugar substitute is used, even though the fruit or juice content equals or exceeds the quantity called for in making jam, the resulting product is considered to be an imitation of the real thing.

* * *

CARPETS AND RUGS have customarily been identified by the weave because the loom on which they were woven produced a certain effect. Now the trade holds that consumers don't know a Wilton from a velvet or an Axminster, and the plan is to drop such classifications altogether, according to Home Furnishings Daily. The wide popularity of the tufted carpets which are not woven but punched through a backing is one of the factors for making the change. Another factor is that different effects can be achieved on a particular loom so that it is difficult to distinguish an Axminster from a Wilton, for example, in the higher-priced range. Furthermore, since the term Axminster has become associated in the consumer's mind with cheap carpets featured at bargain sales, the manufacturers are naturally reluctant to identify the better quality Axminster carpets by name. The inquiring consumer will apparently have difficulty in ascertaining just what she is getting in the future. It is advisable to remember that broadloom is a width and not a weave.

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Arnold: *Tam O' Shanter Overture, Beckus the Dandipratt Overture, Symphony No. 2.* Royal Philharmonic under the Composer and Hollingsworth. Epic LC 3422. \$3.98. These works by an important young Britisher are conservative, melodic, readily enjoyed. The overtures would be at home on a Pops program. The slow movement of the symphony is outstanding. Definitive performance, which is saying a lot, for the players are called on to play very difficult music. Spacious recording. AA AA

Barber: *Symphony No. 1, Overture to The School for Scandal, Adagio for Strings, Essay for Orchestra No. 1.* Eastman-Rochester Symphony under Hanson. Mercury MG 50148. \$3.98. Best of contemporary Barber's early compositions for orchestra and a mighty good record. The *Adagio* and the *Essay* are working their way into the symphonic repertory as staples. With the exception of the *Adagio*, which falls short of full realization in performance, all are well played and recorded. A AA

Bellini: *La Sonnambula.* Callas, Zaccaria, Cossotto, Monti, etc., under Votto. 5 sides, Angel 3568-5s/L. \$12.95. In interest, the lyric passages of this opera surpass the dramatic. Callas sings beautifully except for some wobbly high notes. Her colleagues are nearly as good. The chorus is not precisely on beat here and there. On the whole, the conducting is first rate. Despite minor faults, a fine set. A AA

Brahms: *Concerto in D.* Menuhin (violin) with the Berlin Philharmonic under Kempe. Capitol PAO 8410. \$4.98. Curiously fussy, disjointed, over-"expressive" playing of the solo violin in one of the great concertos. The orchestra follows as best it can. Milstein on Capitol, Francescatti on Columbia, Oistrakh on Decca are far better. C A

Haydn: *Symphonies Nos. 92 and 104.* Berlin Philharmonic under Rosbaud. Decca DL 9959. \$3.98. The "Oxford" and the "London" symphonies rank high among Haydn's works. Spacious recording, though not widest range. Spirited performance with dazzling string playing. AA A

Puccini: *La Bohème.* Gigli, Albanese, etc., under Berrettoni. 4 sides, HMV CSLP 5. 13/14. \$13.70 delivered. Limited Edition. Available from Lambert & Mycroft, Haverford, Pa. The complete opera recorded with La Scala artists in 1938. Gigli shouts too often, but Albanese emerges as the true artist. Strong direction rather than subtle. The sound is acceptable so far as the voices are concerned, less so for instrumental passages. A more recent *La Bohème*, better performed and recorded, is RCA Victor 6006 with Toscanini, Albanese, Peerce. B B

Schubert: *Symphony No. 8 & Mendelssohn: Overture and Incidental Music from A Midsummer Night's Dream.* Philadelphia Orchestra under Ormandy. Columbia ML 5221. \$3.98. The *Unfinished* and the *Dream* retain their position as loved romantic pieces. Beautifully performed and brilliantly recorded. The *Incidental Music* includes the *Scherzo*, *Intermezzo*, *Nocturne*. AA AA

Schumann: *Symphonies Nos. 1 and 4.* London Symphony Orchestra under Krips. London LL 1736. \$3.98. There's a need for a disk offering these selections but Krips' interpretations are prosaic. The recording, though wide range, lacks sufficient volume contrast. B A

Schumann: *Symphony No. 3.* Detroit Symphony under Paray. Mercury MG 50133. \$3.98. The power and beauty of the Rhenish life are present. Paray plays more lightly than many German conductors. Recording a bit thin at the top, but far better than the sensitively performed RCA Victor 2048 with Toscanini. Consequently, Paray's is the best available disk of this work. AA A

Vivaldi: *The Four Seasons.* I. Solisti di Zagreb under Janigro with Tomasow, solo violin. Vanguard BG 564.

\$4.98. A beautiful work well served on LP's. This recording pleases me most of all those available for the superb ensemble, artistic solo playing by Tomasow, and the rich recording. AA AA

Wagner: *Die Walküre—Act III complete (3 sides) and Act II—Todesverkündigung (1 side).* Flagstad, Edelmann, Svanholm with the Vienna Philharmonic under Solti. London A 4225. \$9.96. Act III includes such stirring music as the "Ride of the Valkyries," "Wotan's Farewell," and the "Magic Fire Music." For the most part, the set is very good. Flagstad as Brunnhilde sings nearly as well as she did at the Met a decade ago, except for careful high notes. Principally, the disks are a tribute to her. Edelmann lacks weight in the lowest passages and overall is too meek as Wotan. Svanholm sounds like the best Siegmund around. Exciting direction. Voices well recorded, violins edgy. A A

An Arthur Grumiaux Recital (violin). Epic LC 3414. \$3.98. Grumiaux is one of the finest violinists on the scene today, despite a disappointing, small scale new Beethoven *Concerto in D* on Epic LC 3420. His playing on 3414 of standard works by early composers for the violin—Tartini, Corelli, Vivaldi, Veracini—is technically sound and musicianly. His style resembles Francescatti's though his vibrato is not as pronounced. Richly recorded. AA AA

Horowitz Plays Chopin (piano). RCA Victor LM 2137. \$3.98. Four nocturnes, two scherzi, one barcarolle. Clean, cold playing in the typical Horowitz style. No denying it's fascinating, but I prefer more warmth for Chopin. A AA

Marimbas Mexicanas. Marimba Chiapas. Capitol T 10043. \$3.98. A flavorsome record. Play it to demonstrate your Hi-Fi rig, play it to enjoy its melodic, swinging tunes including many from Southern Mexico and Guatemala. The "band" features marimbas. With the exception of a few ghost echoes, the recording serves as a model. AA A

Pour la Harpe. Marcel Grandjany (harp). Capitol P 8401. \$3.98. Transcriptions of compositions by Debussy, Daquin, Rameau, Ravel, and other French musicians which may appeal to those who like the harp. Admirable playing well recorded. AA AA

Rome With Love. The Italian Accordion of Jo Basile and His Orchestra. Audio Fidelity AFLP 1822. \$5.95. Agreeable listening, for the players make the tunes sparkle. "Luna Rossa," "Tango Chitarra Romana," "Marechiaro," "Santa Lucia," "Torno a Sorrento," and other favorites played gracefully, skillfully by an accordionist, supplemented by a light rhythm background. Rich, wide range recording. AA AA

Songs My Mother Loved. Milton Berle conducts his Orchestra and Chorus. Roulette R 25018. \$3.98. It's a little sticky and sentimental, particularly when Berle intrudes with poetic readings, but on the whole the small, mixed chorus sounds youthful and tuneful and the songs are favorites. Included are "Anniversary Song," "I Don't Know Why," "Imagination," "Dear Little Boy of Mine," "Till We Meet Again." Spaciously recorded. AA AA

The Art of Ezio Pinza (basso). RCA Camden CAL 401. \$1.98. Most of these operatic arias were recorded about 1927 when Pinza was at the height of his career. The sound has been enhanced. A fine memento of an outstanding singer. AA B

The Columbia Album of Cole Porter. Michel Legrand and His Orchestra. 4 sides, Columbia C2L-4. \$7.96. Since the orchestra can't be as bad as it sounds in spots, I imagine the effect achieved is that desired by the conductor. The arrangements are often florid, out of spirit with the clear, direct writing of Cole Porter. Recording is not the best, either. Definitely to be avoided. C A

● OFF THE EDITOR'S CHEST

What every home needs—a competent serviceman!

THE AMERICAN HOME is now so geared to continuity in operation of electric appliances that when any one of them fails to work it can cause a minor crisis in the life of everyone in the household. It is quite understandable, therefore, that the importance of prompt, efficient work by a serviceman gives him a position of necessity in the community second only to the family doctor.

Servicemen complain, however, that although troubles with appliances may at times be nearly as complex and difficult to treat as illness of a human being, the homeowner is reluctant to pay the charges for repairs on the washing machine, television set, range, refrigerator, dishwasher, or garbage disposer. The minimum charge for a service call runs from \$5 to \$8 just to pay for the overhead of maintaining a trained mechanic on call regardless of what needs to be done. If the call runs over an hour, the charge will be somewhat higher.

It is true, of course, that homeowners do not wish to pay anything for a call by a man who tracks up the kitchen or basement, fiddles around with the appliance, and accomplishes nothing whatever in the way of making it function smoothly. Getting a complex electrical and mechanical appliance operating satisfactorily is sometimes a long and tedious operation, complicated by the fact that service manuals are not always available from certain companies for use of independent servicemen.

The time has passed when one or two makes were usually dominant in a particular area under the watchful eye of their respective dealers. Now that shopping at discount houses has become a nationwide habit, customers carry off appliances in the trunks of their cars or in station wagons, often from a store in another state. The installation may be made by the do-it-yourself homeowner, perhaps with the aid of a local plumber or electrician. There are limitations, however, to the do-it-yourself technique, and when it comes to repairing the timer of a dryer the purchaser of the appliance is likely to need the services of an expert, although at least one company (Norge Division of Borg-Warner Corp.) claims to be making considerable effort to educate homeowners to make simple repairs themselves and prides itself on manufacturing its appliances with maximum accessibility of parts.

If manufacturers in this field would adopt a policy of designing appliances for ease in parts replacement, the present shortage of competent

servicemen might be remedied, to some extent at least. Another contribution to improving the present unsatisfactory service facilities would be for all appliance companies to make service manuals generally available to independent servicemen, either without charge or for a nominal fee.

Forward-looking businessmen and educators are endeavoring to set up a program of appliance repair classes in public vocational schools throughout the country. The lead has been taken by the American Home Laundry Manufacturers' Association, which is working through an advisory committee at community levels made up of local service dealers, distributors, and other industry men.

In California, appliance men organized as the Appliance Profession Association have been successful in setting up a service education program of five courses at the Los Angeles Trade-Technical Junior College, including theory courses in electricity.

The consumer who wants good service readily available can contribute his support to training efforts by informing the company whose product he has purchased that he wants his local serviceman to have a copy of the company's service manual for the appliances. Citizens who participate in discussions of school problems may wish to bring up the matter of training classes for appliance servicing, either as adult evening classes or during regular hours, wherever there is an obvious need, interested students, and school facilities for such classes. As the home becomes increasingly electrified and mechanized, and present new appliances, such as electric dryers, washers, dishwashers, air conditioners, and who-knows-what-in-the-future, reach a mature age, there will be an even greater demand for repairmen.

Appliance distributors and dealers, not to mention the manufacturers themselves, will realize that the companies with the soundest program for providing satisfactory, efficient, moderately-priced repairs on their products will achieve the greatest popularity and strongest support among consumers in the long run. Consumers, too, should realize that in a push-button age nothing lasts forever, and in making their original purchase they should consider the service facilities in their locality; those facilities may ultimately be the most important factor in determining their satisfaction with their prized new washer, dryer, air conditioner, or television set.

Window curtains

SPRING IS THE TIME OF THE YEAR when many housewives go shopping for curtains. A great many factors enter into their selections, principally the curtains' contribution to the attractiveness of the room. For example, curtains are used to provide privacy and to frame the view seen from the window. Sometimes curtains help to control light and air.

While all these things are important in varying degrees to different homemakers, the very practical considerations of ease of washing and ironing also enter into the selection. In fact, one retailer has suggested that consumers evidently feel that the ease of washing and the need for little or no ironing are more important to them than any other factors in choosing a curtain.

The selection of the kind of fabric is a highly personal matter, depending on the scheme of decoration used in the home. The fiber of which the fabric is made is another matter entirely. Here is where "easy care" enters the picture. At this time both *Dacron* and *Fiberglas* curtains seem to be the most popular, so far as figures on retail sales indicate. *Orlon* curtains are no longer widely sold.

Though *Fiberglas* is the only fiber which requires no ironing, this property has been freely claimed for other man-made fibers. As for *Dacron*, the question of ironing is open, and it depends on the finishes used and the original packing. One objection to *Fiberglas* curtains is separation of the yarns at points of contact with window frames, radiators, and window edges, which often leaves holes in the fabric.

Nylon and *Orlon* curtains, although easy to care for, yellow excessively in the sun. Fabrics made of glass fiber or acetate would likely be most satisfactory for curtains to be hung over radiators and registers, or at windows getting direct sunlight.

All fibers have some limitations, however, and a knowledge of their characteristics may help one avoid mistakes. To avoid disappointments caused by improper care of the fabric, follow the instructions on the tag or label. Some of the various finishes used can and do alter the properties of the fibers.

Acetate is one of the most durable fibers for curtains that are exposed to heat and light. It is, however, damaged by too-high ironing temperatures. *Celaperm*, *Chromspun*, or "color-sealed" acetate fabrics have the color added to the

plastic mix before it is extruded as a fiber. These fabrics are guaranteed to be colorfast for two years or more. Acetate curtains should be washed carefully to avoid wrinkling—don't wring. Don't bleach them. Iron on the wrong side while the curtains are slightly damp, with a *steam* iron only.

Cotton curtains have a crispness that is lacking in some of the synthetic materials. Cotton is durable but deteriorates in sunlight. Cotton curtains are easy to wash and iron, but they should be ironed in the lengthwise direction. Cotton curtains do tend to shrink and lose their shape in laundering, and the housewife is advised to make an allowance for shrinkage when she buys, rather than risk having to discard the curtains or spoil them by overstretching later.

Dacron has good resistance to sunlight when behind glass. *Dacron* curtains should be cared for in accordance with the manufacturer's directions. Ironing may or may not be required, depending on the finishes used. If curtains are ironed, ironing temperatures must be at "rayon" or "synthetic" setting.

Fiberglas is resistant to damage by sunlight and heat, and is fireproof. It has poor resistance to abrasion and to flexing, however. The fabric may break wherever it rubs against a window sill and where rods are inserted. Although *Fiberglas* itself does not stain, the organic finishing materials used on the curtains may do so. The curtains should be hand washed, not wrung, rolled in a bath towel, and hung up on the rods to dry. Do not iron these curtains.

Nylon becomes yellowed in the sun and deteriorates in both heat and direct sunlight. Nylon curtains should be washed carefully to avoid wrinkling—don't wring them—and should be ironed at a low temperature setting.

Rayon. Don't bleach or wring in laundering and handle the curtains gently when wet, particularly when putting them on stretchers. Ironing is necessary, and a relatively low temperature is recommended.

How to measure for curtains

- Tailored curtains should be 2-1/2 to 3 times the width of the window, for ample fullness. For example, if the width of the window is 36 inches, you will need a pair 90 inches or more wide, overall.
- Ruffled curtains should be 2 times the full length of the rod.
- Crisscross curtains should be 2 or 3 times the width of the window.
- For correct length, measure the distance between the rod fixture at the top of the window to the sill, apron, or floor, as you may choose, allowing one inch for the curtain heading above the rod.
- Use a steel tape or yardstick for making all measurements. A fabric tape measure is likely to give an inaccurate result.



Why are some brands not included in CR's tests?

IT IS OUR AIM, when planning tests, to apply our studies to makes and brands which will have the most interest and value to the largest number of our readers. Sometimes subscribers write to ask why a particular brand with which they are familiar was not included in a certain study. In raising the point, people are often unaware that a brand which is well known to them, or is sold heavily in their area, may not have national distribution. Or, if it is fairly widely distributed, its sales may be only a very small proportion of the market.

There are, for example, somewhere around 30 to 40 makes of vacuum cleaners altogether. Of these, however, not more than seven or eight sell in large volume. As with other appliances, the qualities of economy, convenience, and efficiency that are of importance to the consumer will be found in at least some of the makes that enjoy large sales and are sold almost everywhere.

Reliable tests are expensive, and in many cases the cost of the work may be 10, 20, or even 100 times the cost of the item being tested. We believe it is best for the interest of our readers that we should test a moderate number of items carefully, rather than a large number of brands on a super-

ficial or casual basis, with insufficient technical data to differentiate usefully among excellent, good, fair, and poor products (all of which would seem to be acceptable, if the testing is poorly planned or inadequate).

When one considers common household items, such as the so-called chemical specialties, including automobile polishes and the various powders and liquids for cleaning about the home, the number of brands of products for any given use may run to hundreds or even thousands. Little is to be gained, considering the high cost of the requisite tests, by analyzing a great number of products which are in effect the same product sold under a wide variety of labels and brand names. Only a moderate number of such articles need be tested to provide a good basis of selection for consumers.

For these reasons, it is our practice normally to test brands which are in widest sale, and omit "private brands," for example, of certain big-city department stores, and other brands which sell only to a limited extent, or have local rather than national popularity.

CONSUMER BULLETIN